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THE NEGRO HEALTH PROBLEM IN SOUTHERN CITIES.

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The negro is here for all time. He depends upon the white man for everything that makes up a civilization. These two statements being true, he is what the white man makes him.

The negro (and this term covers not only the black man, but all those of mixed white and negro blood) numbers now about 12,000,000, and it would be an impossible task to remove them from this country. That he depends upon a superior race for everything that makes up a civilization is proved by his life history. It cannot be doubted that he took part in the ancient Egyptian civilization and though but a bearer of stone and a carrier of water, it is in evidence that he helped create cities and the Pyramids and it is equally certain that he went back to the jungle and reverted to type.

I can cite you a latter-day beginning of reversion to type on the part of the negro. The coast of Georgia is fringed with sea islands where the famous sea island cotton was raised. One island, owned for over a century by one family, had unquestionably augmented their stock of slaves by purchases of directly imported Africans, some of whom were of undoubted Berber or Arab blood, the best in Africa. The Civil War freed these people and the impoverished landowners sold scores of small holdings to their former slaves and they were, practically, left to themselves. Soon, the women and children began to raise the crops of rice, corn and potatoes, while the lords and masters worked a little and spent the rest of the time in hunting and fishing. In less than twenty years, voodooism had tainted their religion and the conjurer plied his or her nefarious trade.

Their primitive huts were only approached by narrow and winding paths. In other words, he was doing just what the dog does when he turns around several times before lying down. Placed in contact with the white

man, being a good imitator, he soon tried to follow him in everything. While it will take another century for him to become a successful city dweller, he has gone forward by leaps and bounds. Illiteracy is disappearing and, in the main, he is trying hard to become a good citizen and becomes a valuable asset provided that he is numerically not more than two-fifths of the community in which he lives. If he exceeds that percentage, his progress is retarded and, in a community where he greatly outnumbers the white population, he goes ahead not at all and furnishes a low morality and a high mortality. The cities of Wilmington, N. C., Charleston, S. C., Savannah, Ga., and Jacksonville, Fla., have an excess of negroes over whites and, therefore, each one of these cities is on a sanitary parity with the other.

We will take Savannah, Ga., as an object lesson. There were in 1913 about 39,000 whites and 42,000 negroes and colored people. The deaths from natural causes for that year were as follows: whites, 442; colored, 1,038.

Annual ratio per one thousand	White	11.95
	Colored	24.71
Deaths from tuberculosis	White	48
	Colored	135
Deaths from pneumonia	White	38
	Colored	100

Deaths of Children Under the Age of Ten Years.

Year 1883	White	214
	Colored	333
Year 1893	White	153
	Colored	333
Year 1903	White	120
	Colored	316
Year 1913	White	92
	Colored	289
Stillbirths	White	48
	Colored	230

I am going to try to demonstrate to you what the negro health problem is and the remedy for its solution. It might be said that it is not fair to these other cities to take Savannah as a guide, but with an excess of negroes over whites in each one of these cities, the same high mortality occurs.

I will take the liberty of quoting from my Annual Reports, going back nearly ten years.

(Year 1904.) The high death-rate among the negroes, who live in such colonies west of West Broad street, call for special legislation. The congestion of population there calls for legislation in the building laws. . . . The houses in some streets run in solid shacks for several hundred feet. Houses not fifteen feet wide, with four rooms, are occupied by two families

of ten to twelve. These people have no fair fight for health. While they are ignorant, their environments are such that they will always be ignorant. These people are with us and to stay, and they should be protected against themselves. In doing this we protect ourselves. But few people know of the conditions that now exist in certain parts of Savannah, and, unless the city authorities take hold of this matter these abuses will continue, for this class of property pays enormous returns for the money invested. Here, children are filthy; sleep in filthy houses; eat filthy food and your attention is called to the mortality of children under ten years of age. There were 123 deaths among such white children and 330 deaths among negro children. The negro adult population also shows the result of bad sanitary conditions, the worst of which is overcrowding. There are 5,000 or more negroes in this city who are parasites and their removal would lower the death-rate and reduce crime; therefore, it is recommended that some remedy be applied by enacting building laws preventing the congestion of negroes and the elimination of the depredating class. . . .

Care of Negroes.

(Year 1906.) They are here in excess of the white population, and this means bad results from every standpoint. There are, probably, 72,000 people within the extended limits of this city and of that number 33,000 are whites and 39,000 are negroes. It is an economic fact that the negroes are, as a race, absolutely dependent upon the white people and it is just as true that 33,000 white people cannot properly care for 39,000 negroes and when this occurs the dependent race is a burden in every sense.

Last July, your health officer went over this ground at the Georgia League of Municipalities and the mayors of nearly every city represented there agreed that the above proposition held good in their respective communities.

The enforcement of the vagrant law was recommended by me at that meeting and it met with approval in some instances and disapproval in others. The main argument against it was that the present law was defective. The remedy is apparent. Revise the present law to make it of practical benefit, for if there ever was a necessity for action, it is to throw additional sanitary influences around the negro. There is but one other city that needs these measures more than Savannah and that is Charleston, S. C., the only other city that has a great excess of negroes, and it furnishes the highest death-rate of any city in the United States, according to Government reports. As suggested by me in my Annual Report for the year 1905, a commission should be appointed to look into these sociological and sanitary conditions which confront us. The city government has gone as far as it can by ordinary methods and we face the following issues: First: One set of people, the Caucasian, with a normal death-rate of less

than 16 per thousand per annum and right alongside of them is the negro race with a death-rate of 25 to 30 per thousand. Second: The first-named race furnishes a normal amount of criminals and paupers and the second race of people furnishing an abnormal percentage of lawbreakers and paupers.

"Is the negro receiving a square deal? Let this commission investigate the houses he lives in; why, in his race, is tuberculosis increasing; why he furnishes his enormous quota to the chain gang and the penitentiary; investigate the industrial insurance companies, the money lenders, the installment furniture dealers, and, finally, the matter of the surplus population which is a most potent factor in producing that class of persons which is dangerous to this community and must contaminate its health and prosperity. Better the creation of such a commission, at least for this city and section, than the theoretical gatherings at Tuberculosis Conventions and Immigration Congresses. The negro is with you for all time. He is what you will make him, and it is up to the white people to prevent him from becoming a criminal and to guard him against tuberculosis, syphilis, etc. If he is tainted with disease, you will suffer; if he develops criminal tendencies you will be affected. You cannot observe these things without going where he lives in colonies in this city. Investigate them and you will soon learn that if he desires to improve his sanitary conditions, he could not do it. Observe the house he must live in; the food that he must eat and learn of all his environments."

This is no sentimental dissertation; it is a statement of cold-blooded facts that is of as much value to the whites as it is to the negroes.

(Year 1908.) While the city of Savannah cannot settle the negro problem for the country at large, the municipal government of this city owes an obligation to its people, whites and negroes, by conscientiously looking after the welfare of its inhabitants. Let us consider the issues that we must meet, facts that stare us in the face and conditions that have existed, exist now and will continue to exist unless some action is taken and the remedy applied. Look at these figures of the vital statistics for the year 1908:

	Whites.	Negroes.
Deaths from natural causes	467	939
Deaths (children under ten years)	133	297
Deaths (without a physician)	18	173
Deaths (stillbirths)	46	254
Deaths from tuberculosis	47	121
Deaths from marasmus	26	60
Deaths from pneumonia	36	91

These figures mean that the annual ratio per one thousand of population in deaths among the whites was 14.16 against 24.08 for the negroes; that,

in deaths under ten years of age, it was, whites 4.30, and 7.61 among the negroes; that, in deaths from consumption, it was, whites 1.42, and negroes, 3.10. These figures mean that less than 5 per cent. of total number of white infants are born dead and that over 25 per cent. of the negro infants are dead when born. What does this mean to us? It means that these figures, in going to the Census Bureau (as they do every year) place us in a bad light and that is where we belong. Certainly, immigration will not come our way.

It has been said that other Southern cities present, practically, the same statistics. That is their business, not ours; and they, with us, will suffer from the lack of the right kind of immigration until we have a changed condition of affairs. Further than this, as your health officer has said before, their unsanitary conditions contaminate us. Once more, let me suggest that a commission be appointed—a non-political and non-partisan one—to look into these conditions and others which place the negro beyond sanitary or any other line of improvement. Let the trade bodies, the county medical society, the board of education and bar association name their representatives to investigate the condition under which the negro lives. This they will find and the statement is not based on theoretical opinion or from inferences drawn from book knowledge, but from practical experience and observation.

First: That there are from five thousand to seven thousand negroes more than the white population can support. Second: That they are so colonized that every simple law of sanitation is violated. Third: That, if they wanted to help themselves they could not do it, and, therefore, all the sanitary laws you would pass would not help the situation. This is but the sanitary side of the situation. This commission would unearth the producing causes of the abnormal number of criminals furnished by the negro race. It would demonstrate beyond doubt that there is a contamination of the white race by the negro race and this contamination is both physical and moral. There is nothing overdrawn in these statements for they are facts and even uglier facts will be found upon investigation.

Building Laws.

(Year 1909.) It is an imperative necessity that this city enact building laws which will prevent the construction of uninhabitable houses, which are so constructed that the only idea appears to be the revenue to be obtained from their rental. These houses are built with cunning ingenuity as to getting as many buildings as possible in the smallest area of ground. From a sanitary standpoint, the worst problem we have to deal with in the city of Savannah is this one. There should be laws enacted to prevent the overcrowding, not only of these houses, but to prevent the congestion of people in these houses. A midnight visit to such buildings would be a revelation to the average citizen.

The congestion of residences and of people in them is the one reason why, last year, 34 white people died of tuberculosis, and 124 negroes succumbed to that disease; and, for the same reason, 3 negro children die when 1 white child dies; and there are other diseases, causing a high death-rate which are a result of this disregard of the laws of sanitation. The moral side figures here also. Would you expect an improved morality when families of male and female children grow up in direct contact which necessarily follows when the family is restricted to one room? Would you expect normal health conditions?

It is time for the dominant white race to look this and kindred problems squarely in the face, and legislate for the betterment of these people. The municipality of the future will not be the city of the largest number of inhabitants, but of the better personnel of its citizens.

Your health officer, for nearly twenty-five years, has watched these conditions, and he is neither a sentimentalist nor does he pose as a philanthropist; but, once more, he urges the appointment of a commission (non-political) to look into the conditions which exist here. Better now than when the exigencies of some impending health or social trouble forces itself on this community for immediate solution. The collateral evils which exist here need the work of such a commission as do the lack of sanitary habitations and surroundings for the negro.

(Year 1910.) Your health officer has always held that the prevailing American idea that the city which shows the greatest increase in its population is the city which attracts the best class of citizens, is an erroneous one. He holds that the city which provides best for its citizens is the city which will finally attract the best people to it. This city stands preëminently in the front rank of American cities in the safeguarding of the health of that class of its people who need help, yet we have with us a population which needs help extended to them, of which they are sorely in need. To improve these people in their health and morals is a duty we owe to them and to ourselves.

I refer to the negroes, a population which is easily in excess of the whites. A people, or that portion where the negro blood predominates over the white blood, depends absolutely upon the white race for everything that makes up a civilization. If he is allowed to remain here as he is, he will be a menace to himself and to us. That he is better than he is generally thought to be is self-evident to one who has observed him carefully for years. Judge not the race by observations of him in the criminal courts, nor in the hospitals. While he is not a white man painted black, with all of the mentality and morality of that race, neither is he incapable of improvement over his present position. Unless you legislate for him so that his sanitary condition will improve he will continue to furnish a high mortality.

Note how many of his children are born dead and then follow the high infantile mortality up to the fifth year, and then go and observe carefully the reason for it. It would be just the same result with the white race if they lived in the same environments. Certainly, the death-rate among the children would be the same. Born in closely congested districts in the least healthy parts of the city or in narrow lanes, he seldom has a fair chance for a healthy existence.

After he is grown, he gets no better chance, he is in the same bad sanitary environments and loses his resisting power to disease, the same as any other human being would under the same conditions. For proof of this, see his death-rate from tuberculosis and pneumonia. This is but the sanitary aspect of him.

Again, your health officer would recommend that a commission be appointed to inquire into why he dies in excess of the whites; why he is a bad citizen in the eyes of the law. Investigate his manner of living and investigate those who live on him.

This recommendation is made for the public good; it is made in order that we may better ourselves.

(Year 1913.) Deaths from natural causes: Whites, 442; colored and negroes, 1,038; total, 1,480. Annual ratio per one thousand: Whites 11.95; colored and negroes, 24.71; total, 1,898. The estimate of the population is 37,000 whites and 42,000 colored and negro, a total of 79,000. You will observe that the death-rate of the whites is less than one-half that of the colored and negro.

The following figures show the two principal causes of death:

	Whites.	Colored and negro.	Total.
Tuberculosis.....	48	135	183
Pneumonia.....	38	100	138

Once more, we are faced with the evidence of our neglect to safeguard the white race by disinclination to recognize the negro as a potent factor in the transmission of disease. If you continue to allow him to be herded in the basements of houses and to be colonized in crowded districts, you will suffer. The negro of the lower class is thrown into domestic contact with you and he furnishes 80 per cent. of your household help. You cannot keep pace with modern sanitation unless you care for him.

Deaths Under Ten Years of Age.

The following table is instructive:

Year.	White pop.	Col. pop.	White deaths.	Col. deaths.
1883	20,000	24,000	214	333
1903	29,000	33,000	104	316
1913	37,000	42,000	92	289

This is the result of two conditions: One people (white) are learning to observe the laws of sanitation and this city is advancing in the enactment of laws for safeguarding the health of white children. This remarkable reduction in the deaths of white children is largely due to the enforcement of the milk laws.

If it were possible for negro children to live, under even approximately the same conditions, they would not furnish three deaths for every death occurring among the whites.

There is in Savannah a condition which is interesting to the sanitary observer. I refer to a section of the city where dwell two races of people, differing widely in every respect save one thing, which they possess in common—their dirt. A narrow street divides these people, the Russian Jew from the negro. The first named have the lowest death-rate of the city, while the death-rate of the other is five times as great as that of his neighbor. The one, the hardiest race of city dwellers in the whole world, the other but a comparatively short time from the jungle.

The negro is going ahead in spite of our neglect of him. He is a good workman and finds employment, whether as carpenter, painter, or any of the other trades. While pneumonia and tuberculosis are his greatest foes, he has what appears to be a partial immunity to certain diseases not possessed by the white race, namely; two diseases of childhood: diphtheria and scarlet fever. For some years it was my opinion that these two diseases were existing among them, unknown to the health department. With the close contact of the two races, these diseases could not fail to be transmitted to the white race if it existed uncontrolled among the negroes.

I would here make public acknowledgment that, after twenty-five years of closest contact with the negro race, I have seen a wonderful improvement in him as a man and as a citizen. An exemplification of this is but to tell you that the concealment of transmissible disease is a thing of the past. It has been demonstrated in Savannah that, after being cared for in a humane way, he seldom conceals smallpox and, I say with some pride, no negro patient ever leaves our smallpox hospital who will not report that disease to the health department.

The Southern man is the negro's best friend, but they do not realize the line of sanitary endeavor necessary for the care of the negro. There are many of our profession who are inclined to hold aloof from these people on account of racial superiority. I can assure them that there is no contamination to follow. I meet with them as a race, with their leaders, and do not hesitate to address them at any time or place for their sanitary betterment. I say it to you that, if you wish to keep pace with modern sanitation, give them a square deal.

THE NEGRO HEALTH PROBLEM IN RURAL COMMUNITIES.

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Read before the General Sessions, American Public Health Association, Jacksonville, Fla., November 30-December 4, 1914.

Many interesting articles have been printed relative to negro health problems. A large percentage of these have been presented by those who live in cities or educational centers, and view the subject from the standpoint of the city man or woman. Many statistics are presented as to the relative death-rate of the white and black races, but so far as the subject assigned to me for discussion is concerned, these articles are of no practical value except as a matter of comparison.

Ignorance and poverty on the part of the negro and indifference caused by ignorance on the part of the landlords and voters, are the prime factors in the "Negro Health Problem in Rural Communities" as I view the situation. The statements which I make in this article are based on my experience of six years as a practicing physician in a representative section of rural Southwest Georgia, U. S. A., and five years as Director of Field Sanitation of the Georgia State Board of Health, fighting hookworm disease.

Ignorance, lack of knowledge of practically all of the sanitary laws, is responsible for many diseases among this race. Typhoid fever and diseases produced by infection in the alimentary tract caused me the greatest concern. The natural resistance of the negro to these diseases was in my experience far below that of the white race. You have but to visit the homes, churches and schools in any rural section to get your answer,—Why the prevalence of such infections? Less than 50 per cent. of the negro homes inspected have privies of any type and a very small per cent. of the schools and churches. The springs and wells become contaminated and these diseases of "soil pollution" become endemic. Screens are almost an unknown proposition and flies carry disease germs to their food, particularly the infant and small child, and many suffer and die. The proper disposal of infective material is unknown except in a few instances, and then it is improperly executed through ignorance. With sanitary conditions as to soil pollution as they are, who can wonder that hookworm disease, typhoid fever and other infectious diseases of the intestines are prevalent.

Another problem with which they have to deal is tuberculosis. While this may not exist to so great a degree among this race in rural

communities as in crowded sections of cities, it is a great menace, and takes its toll of thousands. But few negroes know that this is, as they call it a "catching disease." They consider it purely a matter of heritage. Believing thus, they put forth but little effort to prevent it. Visit with me, if you please, a typical negro community. There are probably one dozen houses, of from one to three rooms. Many of them have two families in the same house. These houses are scattered over a few acres of land and are known as "the quarters." One or two wells, and often a spring furnishes water for all of them. The woods and underbrush furnish a place of privacy, and this area reeks with the vilest of human waste. In one house, we find a case of typhoid; in another, a case of tuberculosis and often a case or two of active syphilis; one or two will probably harbor the *plasmodium malariæ*. The family washing is done near the spring and as small puddles of water are ever present, mosquitoes abound.

It is a peculiar failing of this race that where sick and sorrow are, there friends and neighbors render all aid in their power, so after a day of hard work, their resistance at its lowest, may come to sit up with the sick. Under these conditions, is it any wonder that many contract these diseases?

Are they financially able to help themselves? Why the average annual income of these families is not more than $240!

Typhoid fever, hookworm disease, malaria and all of the infectious and contagious diseases spread from these foci of infection.

Picture the school-house and church a few miles away, with the spring or well and with sanitary conditions on a par with the homes. These, then, become the places for dissemination of disease as well as knowledge. Why I have seen them at their churches and schools with smallpox.

We have paid dearly for these conditions in both life and money, but what are we going to do and how shall we do it? Educate them and at the same time educate all along proper lines and poverty will cease to be the menace it now is. The landlord will begin to understand that health of his employees pays. The voter will instruct his representative to support health laws and appropriations. Then with the health laws we now have, supported with necessary funds, place in operation the laws of sanitation and completely change the habits of a people which will demand much time and patience, but it is well worth the price.

The state boards of health, the national public health service, the national and state departments of education, antituberculosis associations, civic leagues, women's clubs, the press, etc., have already done much in this line of education, but the knowledge disseminated through these agencies has not reached the homes of the negro in the country districts to any appreciable extent. We must ever be mindful of the fact in spreading the gospel of health that disease is no respecter of persons or

race. Doctor Kennedy of Tuskegee, Ala., very nicely expresses it when he says, "It cannot be denied that, whatever may be done for the uplift of the negro as a race, at the same time helps the general public." So we must reach them by direct teaching.

It has been stated, and I believe is generally accepted, that we have sufficient knowledge which, if properly applied, would stamp out preventable disease. If this is true, then why do we not stamp it out? The answer has been given—ignorance. How are we to reach the rural negro, teach him and protect him? Teach the simple laws of hygiene and sanitation in the schools and begin this subject early, say the second grade. This will, in due time, make it easy for the health officer in his work. Then give to the rural districts modern standards of cleanliness and modern local and state machinery for applying sanitary methods everywhere, supported by local and state taxation.

THE NEGRO HEALTH PROBLEM.

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Read before the General Sessions, American Public Health Association, Jacksonville, Fla., November 30–December 4, 1914.

The negro health problem is one of the "white man's burdens," and it is by no means the least of those burdens. It is at once the most serious and the most difficult health problem with which the people of the South are confronted.

The statement that "None of us liveth to himself, and no man dieth to himself" is as true today as it was when the Apostle penned it to the Romans nineteen centuries ago. And it applies with as much force to our "brother in black" as to any other man. Because of the fact that no negro liveth to himself nor dieth to himself the negro health problem is not alone a question of concern to the black man, but is one of equal moment to the white population in communities where the negroes are found in any considerable numbers. Disease germs are the most democratic creatures in the world; they know no distinction of "race, color, or previous condition of servitude." The white race and the black race will continue to live side by side in the South, and whatever injuriously affects the health of one race is deleterious to the other also. Disease among the negroes is a danger to the entire population.

Communicable diseases find their favorite propagating grounds in the dirty negro sections of our cities, and in unsanitary negro homes in the country. From dirty homes, in these disease-infested sections, negro people come into intimate contact with white people every day that passes. We meet them in our homes, offices, stores, in street cars, and almost everywhere we go. The fact is not pleasant to contemplate, but is nevertheless true, that there are colored persons afflicted with gonorrhea, syphilis, and tuberculosis employed as servants in many of the best homes in the South today. In every instance the employer is, of course, unaware of the risk being taken. Various diseases are often spread in this way.

It is undoubtedly true that the negro race has deteriorated physically and morally since slavery times. In some ways he is perhaps more intelligent, but freedom has not benefited his health, nor improved his morals. There is more sickness and inefficiency and crime among them now than before the war. All old physicians tell us that in slavery time consumption was practically unknown among the negro race. This fact, I believe, is thoroughly established. But how is it with them now? The figures speak for themselves. In the year 1911, as set forth in Census Bulletin number 112, the death-rate per one hundred thousand from tuberculosis of the lungs, in the registration area, was 162.2 for the whites, and

405.3 for the negroes. In other words, the death-rate of the colored people from this disease *is more than three times the death-rate of the white population.* In Jacksonville the rate for the whites 154.4; that for the negroes is 319.5. In Atlanta the white rate is 109.9, the black rate 297.4. In Savannah the white rate is 118, the black rate 328. Everywhere you look the proportion is about the same.

Because of the excessive death-rate among the negroes from tuberculosis the impression has gone forth, and has been widely accepted as true, that the negro race has a peculiar susceptibility to this disease. When all the facts are considered it seems to me that such a conclusion is not justified. Why was the negro free from tuberculosis during slavery time? The answer is obvious. Then he was disciplined; then he was made to bathe, and to keep clean; he was furnished a comfortable cabin in which to live, which he was required to keep scrupulously clean; he was given plain, but wholesome food, in generous quantities; he was made to stay at home at night, and rest, that he might be able to work; he was not allowed to roam the country, but was kept at work regularly, and was taught how to do his work in a skillful manner; he was not allowed liquor, nor indulgence in vicious pleasures; if he became ill the best physician obtainable was called to treat him. The health of the children was carefully looked after. It was to the slave owner's interest to do these things. The more efficient the slave the more valuable he was. A sickly negro was of very little value—a dead negro none. There was no more healthy race of people to be found anywhere in the world than the slaves of the South before the Civil War.

When freedom came, and all restraints removed, the negro began to indulge in all kinds of dissipation, and to practice all the vicious habits known to civilization. He now had to "shift for himself," and not having any experience in providing a living for himself and family (because the master had always done this) and thinking that freedon meant release from all work, he got along very badly. Like a child turned out in the world, homeless and penniless, he became the prey of any rascal who was disposed to take advantage of his situation. To make bad matters worse, his unwise friends rashly gave him the ballot before he was sufficiently intelligent to use it properly. Then, designing politicians, with insane political propositions and policies, proceeded to stir up all manner of race hatreds and prejudices, which had not existed previously to that time, and which has not yet entirely disappeared, but which, I am glad to say, is gradually passing away. All this was bad for Cuffy—dreadfully bad. Hurtful ideas got into his head. He became unreliable. Criminal tendencies grew upon him, and evil ways overcame him. He was prosecuted and persecuted. He often went hungry, picking up food when and where he could find it. His clothes became ragged, his home filthy, his children neglected. Disease began to prey upon him. From this deplorable condition into which the negroes were

precipitately plunged at the close of the Civil War, they have not yet emerged. The present generation of negroes have grown up amid very unfavorable surroundings, and without home training, or discipline. Many of them have not had a bath since infancy. They live very irregular lives. They often roam about at night, some of them indulging in licentious debaucheries of the most disgusting character. Their homes are filthy, and their home language unchaste. Their girls early learn evil ways. Ignorance and superstition take the place of science and skill in the care of infants. I have never seen a negro mother who was unable to nurse her infant at the breast, but notwithstanding this fortunate circumstance the death-rate from enteritis and diarrheal diseases is excessive among them, being, in children under two years of age, 75.9 for the whites, and 111 for the negroes. It is the lack of physical and moral cleanliness that causes the death-rate to be so much more among the negroes than it is among the whites. Go into their homes and investigate for yourselves. You will never realize the true situation until you do. In the homes of the best of them you will find the front part of the house in pretty good condition, but the kitchen and back yards are neglected. In most instances the house in which the colored man lives is too small for his family. Miss Frances M. Kinney, a colored lady of intelligence doing social work among the negroes of my county, under the direction of our board of education, in a letter to me says: "I have in mind now a family of twelve living in a three-room cottage. They sleep without any ventilation whatever, and are as filthy as pigs. They go half-clad, and from three to four sleep in one bed, some sleeping in the cook room." Again she says: "The men and boys are stronger and healthier than the women and girls." She says the women in the rural communities do more work than they are able to do, often doing as much work in the field as the men, besides doing the cooking and housekeeping. She continues: "The next generation of negroes will be weak, yes, consumptives, unless something is done to strengthen and protect our girls, who are to be the mothers of the next generation." Miss Kinney goes on to say that her people are very careless with contagious diseases, allowing children to eat and drink after patients afflicted with consumption, and to sleep with such persons.

Again, old physicians tell us that in antebellum days the negro race was practically free from venereal disease. Now syphilis and gonorrhea are very common among them. In fact very few negroes escape one or the other of these diseases. Many negro women have gonorrhea, and pay little attention to it. This is a very real menace to our white boys, and through them, after marriage, to our innocent daughters also. For, despite our best efforts, many boys are going to sow wild oats. Even Solomon the Wise, in his mature years earnestly exclaimed: "Remember not against me the sins of my youth." Evidently the old king had reference to his

youthful wild oats. Sterility among the negro women is becoming quite common as a result of the activity of the germs of Neisser. The birth-rate among them is diminishing. The tremendous amount of evil that venereal disease is doing the negro race is incalculable. If the spread of syphilis, gonorrhea and tuberculosis among the American negro is not checked, this once physically superb race will become extinct with a few generations.

I contend, then, that it is not a peculiar racial susceptibility to tuberculosis that is causing this disease to destroy so many people among the negro race, but his environment—his bad habits and his insanitary conditions of living. The same causes operate to produce a high death-rate from other filth diseases. Take for instance puerperal fever. The death-rate from puerperal sepsis in the registration area is just about twice as great among the negroes as it is among the whites. But for the circumstance that all negro mothers nurse their infants at the breast the death-rate among their babies would be appalling. I suppose that when negro women adopt modern styles of dress, and modern social customs, they will also begin to give their babies the bottle. By an examination of the Census Bulletin referred to above, and other health reports, it may be seen that those diseases that are caused from filth, contagion, carelessness, insanitary living conditions, and exposure to cold have a high death-rate among the black population. The death-rate from pneumonia is 128.4 among the whites, while among the negroes it is 252.2. Other diseases that have a notably high death-rate among the negroes are: smallpox, typhoid fever, whooping-cough, rheumatism, influenza, and organic heart disease. It is worthy of remark that the negro race possesses, apparently, a notable degree of immunity to scarlet fever, the death-rate from this disease being eight times as high among the whites as it is among the negroes. According to my personal observation enlarged tonsils and adenoids are extremely rare among them. Mouth-breathers are infrequent.

Negro children, as a rule, are neglected, not receiving proper training at home. Their ailments are given too little attention. Food is often lacking. Parents are incapable of giving their children proper care and training. The schools teach only book-learning. Many are allowed to grow up in idleness, and often acquire habits of indolence and vice.

The negro's health condition will remain bad until his intelligence is greater, and until his financial condition is improved. On account of his poverty, his food is of the cheapest variety, and it is badly cooked. It is a real wonder how millions of negroes manage to live and do good work on the kind of food they are forced to eat, and the character of cookery they get. Frances Kinney, herself a negress, has lived and worked among negroes all her life and knows what she is talking about when speaking of the negroes. In a letter to me Miss Kinney says: "The average colored family live principally on meat (bacon) and bread, which is poorly prepared,

especially for school children. The meat is generally fried, and lunches are put up hot in tin buckets, and on opening at lunch time the food has a very disagreeable odor, often driving away the appetite of a delicate child. The meat is soft and soggy, and the bread is in about the same condition."

In answer to a question Miss Kinney says: "The colored people do not have any regular hours to take their meals. They are very careless indeed about going to bed, but get up at a pretty regular hour. It is common for a family to sit up until 12 or 1 o'clock at night, and get up at four in the morning. Many of the women work until a late hour, but when not at work they naturally sit up from force of habit. This habit was handed down to us from a former generation."

I asked Rich Young, a preacher and schoolteacher, if it were true that his people, as a rule, sit up late at night. He answered that it was true, and that many of them *stayed up all night*, and that many of them roamed the neighborhood at such times.

There is no doubt that the habit of staying up late at night, and even all night, is common throughout the negro world. This habit is helping to undermine the negro constitution. It was not allowed in slavery times.

A noticeable defect in the negro character is the want of initiative. He waits to be told. Give him orders, tell him what to do, and set him at it, and he is all right. This lack of initiative in the negro character has far-reaching effect on the condition of the race. But I cannot go into this here.

Habitually careless about most things, the negro is especially careless about caring for the sick. Frances Kinney says: "The day has come throughout the country that you suffer when you get sick if you are not a member of some good society, or club. In the church it takes all the money for the preacher, and he hardly ever has anything. The negroes are only too ready to shield and protect a criminal, whom they regard as a sort of hero, but a sick negro they often regard as a nuisance. In the majority of negro families the sick are never bathed, and their clothing and bed clothing are not changed for weeks at a time. The room is not aired, nor kept clean. In rural communities the negroes often live inconvenient to physicians, and they have no money with which to employ medical attention. In my county it is a common practice for landlords to employ physicians to look after their tenants. Physicians also do a great deal of charity work among them, but they cannot do all that needs to be done."

The negro is not lazy. He is not afraid of work. He will undertake hard jobs which the white man shirks. But he loves carnal pleasure, and he lacks self-control. In other words, *he possesses powerful propensities for pleasure, but his inhibitory centers are rudimentary and weak.* This important fact should never be lost sight of in studying any negro problem. This peculiar mental make-up accounts for many of his follies, and most

of his crimes. He is unable to withstand temptations and enticements. In slavery times his master's authority restrained him. For this effective control our preaching and teaching have proved a "broken reed."

The negro men love to frolic with the women; and the women love to frolic with the men; so they frolic. The negro loves to drink—and he drinks. He is especially fond of congregating with other negroes, and this is the reason he stays up so late at night. He attends church regularly—unless there is somewhere else to go. He goes to all the shows and picnics. He attends all the camp-meetings, and—all the dances. At such places he often gets into a scrap with some other negro, and shoots him or stabs him, or else "gets it in the neck" himself. It matters not how grassy his cotton, if the railroad runs an excursion anywhere he will go or die. He never misses a funeral. I once had working with me a negro man who made me a good hand, except that he would sometimes get drunk. But every time a negro died anywhere he had some excuse for going to the funeral. He would come and ask permission to go, stating that the dead negro was his uncle, or his aunt, or his cousin, or some other relation. Never a negro died anywhere that was not some kin to him.

In going to these places of amusement the negro loses a large part of his time, and causes his employer much annoying inconvenience and loss.

Every one conversant with the facts admits that the negro health problem is an important problem, which imperatively demands attention. The question is: What are you going to do about it?

After all, the problem does not differ greatly from the same problem regarding certain portions of our white population. Ignorance and poverty are everywhere associated with disease and vice. Filth and contagion, coupled with ignorance and indifference, always bring about disease and death. The remedy of greatest importance is—*education*. But by the term "education" I hope I shall not be understood to mean the kind of learning the negro has been getting for the last fifty years. Millions of dollars have been spent, and thousands of teachers and others have devoted many years of earnest labor to the education of the negro, and as a result of it all we find the negro race as a whole in a worse condition than they were in slavery times. True a few negroes have accumulated property; a small number have become markedly intelligent; a few have become skillful laborers; but the great mass of common negroes are today densely ignorant and poverty-stricken. Most of them are unskilled laborers, working for small pay; not a few are vagrants; some are in our almshouses; a very large per cent. of them are diseased; and quite a large number of them are in our jails and chain gangs. These facts cannot be denied. I contend, therefore, that the kind of education we have been trying to give the negro has been a disappointment.

Every negro child has had what we may term a preliminary education. This preliminary education was begun several hundred years before he was

born. His education can be continued and finished successfully now only if it is conducted in accordance with his preliminary preparation. Human beings show a great many grades of intelligence, and a great diversity of talents. Some are so defective in intelligence that they have to be cared for like infants. Now I contend that in the education of any child, of any race or color, it should be taught according to its capacity and grade of intelligence, and its probable opportunities in life. What the negro needs is an education that will take the place of the discipline which he received in slavery times, and that will fit him for some useful employment that is open to him. The negro will remain poor until he becomes sufficiently skilled to earn better wages than he now gets. But no matter how much he *earns*, he will still remain poor until he acquires habits of economy, and quits spending his money for liquor, and on loose women, and quits squandering it in gambling, and in other ways that hurt him instead of help him.

The negro should be taught to work, and trained to keep regularly at it. He should be made to understand the value of time. He should be taught thrift. Proper ideas of cleanliness, sobriety, chastity, honor, and self-reliance should be instilled into his mind. These things are indispensable to his welfare. Some of the wisest negroes are beginning to see the wisdom of giving the negro an industrial education instead of teaching him Latin and Greek.

The physician should be consulted, and his expert knowledge made use of, in the education of the negro race. What is the object of an education? Evidently, it is to fit the child for the duties of life; to train and develop its physical, moral and mental potentialities so that it will be able, in the "struggle for existence," to fight its own battles, and to prosecute successfully whatever calling or business it may undertake for its life work. To succeed in life it is as necessary that a person be efficient physically as it is that his mind be developed. Good character, good habits, and skill in working with the hands are more valuable than a knowledge of the elementary branches of an English education. And an education that does not teach cleanliness and the proper care of the body is a defective education.

A large per cent. of the negro schoolhouses are dirty and insanitary. They are not ventilated, especially during the winter time. The privies are unspeakably filthy, and infested in summer with swarms of flies. At some schools there are no privies, and the children have to go to the woods, which means the spread of intestinal parasites transmitted through the soil. Children with physical defects, in both the white and the black races, are being neglected because their parents are not sufficiently intelligent to have them given proper medical attention. If a child with any of the more serious diseases or defects, such as hookworm or adenoids, is allowed to grow up and reach maturity with such troubles unremedied, such a child

will be seriously handicapped for life. Having had his development retarded during his formative period of life, he finds himself at maturity weak in body and mind, and burdened with disease, and unable to cope with strong men in any calling or pursuit. Hence our educational methods should be changed. The development of a sound body should be the first object of an education. It is a regrettable fact—an exceedingly regrettable fact—that very much of the physical and mental inefficiency seen on every hand today among adult men and women could have been prevented by intelligent care during childhood. The remedy for these evils is the medical inspection of schools. This should not longer be put off. Sound principles of economy alone justify it. Every sentiment of humanity and patriotism demands it.

I am convinced that we cannot depend upon the negro churches for much help in bettering the condition of the negro race. The churches are in a rut, and cannot get out. In them there is too much sentiment, and not enough sense; too much praise, and not enough piety; too much glory-hallelujah, and too little sound morality.

A colored lady of intelligence says: "Our preachers are not what they ought to be; they go in too much for money, and not enough for the happiness and welfare of their people. They would do more good if they would stop preaching so much about heaven, and teach the people how to *live right*, in neat clean homes—homes that are clean physically, mentally and morally. More stress should be placed upon the word *live*."

A good friend of mine, a physician, says: "You might as well try to teach sanitation to mules as to try to teach it to the negroes." With this opinion I do not fully agree. I admit the task is a hard one. Progress will be necessarily slow. But the negro is not incapable of learning. It is our methods that are at fault. In some of the schools in our county, thanks to Frances Kinney, they have individual drinking cups, and nice lunch baskets made with their own hands. In this respect they are more advanced than some of our white schools. The trouble with the negro is not so much his inability to learn as it is his carelessness and indifference in doing that which he is taught to do.

Clubs of various kinds have been organized among the negroes of my state (and I suppose in other states), and from what I learn some of these clubs are doing valuable work, more valuable in character than that which their churches are doing. Parents meet with the children in these clubs, and all are anxious to learn. This work, however, is quite limited at present. I am told that mothers who have been instructed in these clubs are trying to keep their homes cleaner and more sanitary.

It occurs to me that these clubs give us a clue to a solution of the negro health problem. Improvement clubs, formed somewhat after the manner

of the boys' corn clubs, and the girls' canning clubs, organized at every schoolhouse in the land, would offer a sane and practicable method of solving the problem, or at least greatly improving the present conditions. On account of the negro's gregarious proclivities it should not be difficult to secure a large attendance at these club meetings. Capable teachers, physicians, and social workers should be induced to help in this work. These clubs should be a kind of school for all ages. In addition to improved methods of farming, stock raising, poultry raising, etc., hygiene and sanitation should be taught at these meetings. Prizes might be offered for various things, as for the woman who has the cleanest house and yard. By teaching these people a few simple facts an inestimable amount of good might be accomplished. The women should be instructed in cooking, and the care of infants. The manner in which tuberculosis spreads from the sick to the well, and the approved methods of preventing the same, should be explained. They should be made to know that typhoid fever is an infectious disease, and instructed in methods of disinfection and cleanliness, and informed of the benefits of typhoid vaccination. They should be told how the mosquito spreads malaria, and instructed in methods of prevention. They should be told of sanitary privies, and that houseflies are as dangerous as mad dogs. They should be especially instructed concerning the two twin enemies of the negro race—gonorrhea and syphilis. Many other things will naturally suggest themselves to you. Let them understand that disease, for the most part, is under man's control. Divest their minds of the vague superstitions which most of them harbor concerning the causation of disease, and make them understand that disease is caused from uncleanness, alcohol, germs, bad habits and bad morals. The negro should be inspired to think more of himself, and to place a higher value upon his life. Call their attention to the remarkable old age which many of their ancestors reached, but to which few of the present generation can hope to attain. They should be taught the great value of sleep, which they do not seem to appreciate.

In conclusion, the health of any people is the foundation upon which their happiness and prosperity and usefulness rests. If the individuals of any race yearly diminish in stature and physical strength, that race is doomed.

The negro race in America is deteriorating, and at a rapid rate. The death-rate among them from filth diseases is alarming. The race is headed toward destruction. Unless something is done to arrest the spread of disease among them the race will go as the American Indian went within a few generations.

The educational and religious efforts that for fifty years have been employed to better the condition of the negro race have been disappointing. Our educational methods should be changed radically.

Every influence that helps to increase the negro's efficieney, everything that encourages him to become productive and self-sustaining, and that helps to make of him a better citizen lessens the "white man's burden."

The fundamental source of disease, as well as of vice and crime, among the negroes is shiftlessness, ignorance, and poverty. The remedy is a systematic, *disciplinary* training of his physical, mental and moral powers.

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THE TRAGEDY OF VACATION TYPHOID.

Most of our summer resorts have grown up in a haphazard way so far as sanitation is concerned. Many summer resorts, while attractive looking, are really no better than primitive camps or boom cities. There is often an utter disregard of the elementary principles of preventive medicine. Frequently there is no organized health department whatever; no systematic disposal of sewage; bathing beaches are often visibly polluted; the fly menace and mosquito danger are not checked; nuisances are permitted without abatement; no supervision is exercised over the water supplies, and no surveillance is maintained over the milk and other food supplies. Under these circumstances, health resorts become death resorts.

The principal business of a vacation playground is carefully to safeguard the health of the strangers within its gates. There is only one known way in which this can be done, and that is through a well-organized health department, properly supported. Health resorts can no longer trust to climate, charm of location, beautiful scenery, and luck for a good health record. Most of our health resorts need a sanitary house-cleaning. In order to do this effectively, it requires a full-time health officer, qualified and trained for such work. After a place is put in good sanitary condition it needs constant supervision and expert care to maintain a good health record. It is the duty of state boards of health to instruct the people to demand a clean bill of health from a summer resort before going there; and it is the duty of the state board of health, on the other hand, to impress upon the summer resort the importance of placing its house in order.

In this issue of the JOURNAL, a report is published by Professor Councilman and his colleagues showing the way York, Maine, met its obligations in this regard. This report is published because it appears to us to be a model of its kind. Typhoid fever prevailed last summer at York. Instead of hushing up or trying to hide the facts, the authorities of the town realized that the best way to meet any danger was to face it in the open. A sanitary survey was made, and one of the chief recommendations was that York needed a full-time health officer. William Eustis Brown, a graduate of the School for Health Officers of Harvard-Technology was given the position, and the town appropriated $2,500 a year which is approximately $1 per capita, a larger sum than is spent directly for health by any other American community.

Other health resorts will find it to their interest to adopt the policy of "safety first," for the people are wary and the stigma of typhoid fever, or a bad health record, will greatly injure the summer business of any health resort. Public health is purchasable; the price is moderate; the tragedy of vacation typhoid must cease.

COÖPERATION IN PUBLICITY.

One of the conspicuous movements in public health work today is that of publicity—directed both to education of the public in hygienic principles and to the strengthening of sanitary administration through adequate financial and moral support. Another movement, not less conspicuous, is that of coöperation, of correlation of the various public health agencies in order to secure the resultant strength and economy. And now, at the point where these two movements blend, we find the application of coöperative methods to publicity work.

Not long ago the health officer or civic organization which desired to produce a health exhibition, or even a simple exhibit, found it necessary to collect data, to plan models, charts, or what not, and to go to considerable expense to have these constructed. Then, after all, the results frequently did not come up to expectations. Time and money were spent more or less inefficiently and disappointingly.

But publicity has now become a specialty and the construction of publicity material, from models and charts to lantern slides and printed matter, an art in itself. From a number of specialized sources—public, semi-

public, and private—excellent exhibition material may now be bought, rented, or borrowed. It is a fact of very practical importance in the publicity campaign now so generally taken up by progressive health departments, that practically any material which may be needed can be secured, at costs adapted even to the very limited means, by getting in touch with one or more of those sources. The JOURNAL will be glad to send a suggestive list of sources from which publicity material can be obtained to any who will write for it. Such material is planned by publicity specialists; the execution is of the best, and the local health officer has but to choose his subjects, send for his material, and place it upon public view. Even to the smallest town, which can at the start afford nothing more, a single piece of effective exhibition material, dealing with a pertinent subject, exposed in a vacant store window, should well repay the small effort and expense of securing it.

SIGNIFICANCE OF THE ROCHESTER MEETING.

Because of the exceeding great noise in the world, we beg leave to drop our editorial dignity and shout. With a strong voice full of hope and enthusiasm we want to announce to the whole continent the coming meeting of the American Public Health Association at Rochester, N. Y., September 7–10, 1915. Above all the international roar this is to be distinguished as one note, clear and significant. It means that underneath the deeply disturbed surface of human life, the advancement of humanity, the work of sanitation, prevention of suffering, and improvement of human kind is moving forward hopefully and undismayed. It is expected that this convention of public health workers will be the largest and most important that the Association has known in its history. An organized effort is already being made to insure an unusually large attendance at this meeting in Rochester. The city chosen this year is easily accessible to a large majority of members. All those who live within moderate distances of Rochester should decide now to go, and arrange their fall work accordingly.

Moreover, it is planned that the New York State Conference of Health Officers meet with the Association in Rochester, September 7–10. All of the several hundred health officers of New York state should be members of the American Public Health Association before they go to this joint conference in September.

It will be an extremely important meeting, also, in matters concerned with the development of the Association itself and with the organization of national health work. Among other things is the proposed adoption of a revised Association constitution, which a special committee is now preparing for presentation. Other committees are already at work arranging an excellent scientific program, and the local committee in Rochester is making thorough plans for the reception and entertainment of all who attend.

Members of the Association all over the country should be working now every day among their friends and professional acquaintances to secure new members to bring with them to this Rochester meeting. There could be no more significant mark in the record of American civilization than the brilliancy of a successful meeting of the American Public Health Association shining out against the dark background of the year 1915.

THE NEGRO AS A PROBLEM IN PUBLIC HEALTH CHARITY.

LAWRENCE LEE, M. D.,
Savannah, Ga.

Read before the General Sessions, American Public Health Association, Jacksonville, Fla., November 30–December 4, 1914.

In considering the question of the negro as a factor in public health, first let us look into the type of diseases with which he is most commonly affected. Dr. C. E. Terry in his article read before the American Public Health Association in Washington in 1912 and before the Southern Medical Association in 1913 at Lexington, Ky., shows that tuberculosis and other respiratory diseases and still-births cause a death-rate of 917.9 per 100,000 against a rate of 354.7 for whites. The Savannah Board of Health reports show for 1913 the death-rate from the same causes to have been 1,185 per 100,000 for negroes against 375 per 100,000 for whites. The disease most prevalent among the negroes, however, does not show in these figures.

I have found from personal experience, and I am sure that those doctors present who have had the disagreeable duty of treating any large number of the negro race have found, that venereal diseases are present in over 50 per cent. of those presenting themselves for treatment. Syphilis has as much to do with the high death-rate in the negro as any other single factor. It does not show on the death certificate, but as a complication of bronchitis, pneumonia and tuberculosis, it reduces the chance of a successful fight against these diseases, and as a cause of arterio sclerosis, endocarditis, cerebral hemorrhage, nephritis and still-births it seems to be ever present.

As city physician during three years I treated 1,426 negroes, 486 of whom (about one third) had syphilis in some evident form, to say nothing of those who came to me with minor injuries, biliousness, etc., who only paid one or two visits and in whom the disease was latent, and in whom I did not make the diagnosis. I personally believe that more than 50 per cent. of the colored race suffer with this disease, either inherited or acquired. If this be the case, as I believe it is, syphilis is almost *the* important factor in the high death-rate of the negro race.

How much through the negro race the white race is affected with this disease I am unable to state. I have never seen a case in a white contracted innocently from a negro and have heard of but few. This goes to prove that syphilis must be very slightly contagious in ordinary daily contact. The negroes live in our homes, care for our children, wash our clothing, cook our food, and if syphilis were very contagious from ordinary contact

numerous cases of syphilis of the innocent among the whites would have been reported.

As long as conditions exist as they do at present in negro homes, schools and hospitals, the prevalence of infectious diseases, especially such diseases as syphilis, tuberculosis, respiratory diseases, typhoid and malaria will increase rather than diminish. Negroes do not seem to be particularly subject to other infectious diseases, except smallpox, and vaccination is the prevention for it.

Let us look briefly into these conditions. I can speak from personal knowledge only of conditions in Savannah, but I am sure that conditions here are no worse than in the average southern city.

Their homes are usually one-story cottages, built in long rows of tenements, close to the ground, with small windows. In these homes a large number of people crowd, so that the negro section is very densely populated. In the district where the negroes live the house drainage system has not been installed as yet in all the houses, although rapidly being installed, and there is still a good sprinkling of the old-fashioned privies.

Living under such conditions typhoid, while never to my knowledge epidemic among them in Savannah because they cannot afford milk, and the water supply is fine, is always endemic and a constant source of danger to the city with the added danger of an epidemic among the whites through negro carriers working in a dairy.

The negroes hate cold, and it is almost impossible to get them as yet to open the windows of their homes in winter or if they are sick. Crowded as they are and fearing ventilation no wonder tuberculosis and respiratory diseases are so prevalent.

Into these homes our washing goes, and I have seen it more than once on the sick bed of a tuberculous patient. From these homes negroes come into our homes and, as our servants, are in most intimate contact with us. I know of one man who in the course of two years had three servants who had tuberculosis. He was a doctor and when he heard a suspicious cough had his servants examined, and the tubercle bacilli were found. Most employers, not realizing the danger, would fail to have the examination made.

Most of the negro houses in Savannah are on the outskirts of the city, in or near the district where the drainage is not perfect (this condition here is also being improved at present). The stagnant water in the low ground breeds mosquitoes. I have found in my practice that the negro is not immune to malaria but is moderately susceptible. He therefore is a carrier of this disease as well, and a frequent carrier in my opinion.

Their Hospitals.—It is no surprise to me that the negro is afraid of a hospital. The negro hospitals I have seen are warranted to repel and even terrify people less superstitious than the negro. In Savannah I know of

no negro poorhouse, so that the hospitals have to take care of the aged, infirm, paralyzed and blind. As a result they are horribly overcrowded. In the largest colored hospital in Savannah frequently when night comes there are ten or fifteen more patients than beds, and no matter how hot the weather two patients have to sleep in a single bed, and some on the floor or in chairs.

During the six months, April to September, 1914, inclusive, on 667 occasions patients were without individual beds. In April there were only five days on which there were sufficient beds on which to accommodate all the patients. In May, three; in June, six; in July, ten; in August on no day were there sufficient beds. Since August, by the establishing of a house surgeon, and having such surgical patients leave the hospital as could and return for dressings, the wards have been kept from overcrowding as in previous months. In September there were only four days in which all the patients did not have beds, and in October one.

By establishing a negro free out-patient department, and a negro poorhouse the present hospital facilities might be sufficient for a few years more.

The South has a tremendous burden in the negro, and it is remarkable how much is being done with the funds available, but if healthy conditions are to be established here much more must be done.

Their Schools.—Savannah has just completed another modern school building for negroes, but in 1913 out of 10,699 colored children between the age of six and eighteen there was only provisions in the public school for 4,086.

The South, as I have said, is carrying a heavy burden. In Chatham County the tax returns for 1914 show for the whites, $42,508,970.00; the negroes, $1,160,839.00. The taxes paid in by the negroes amount to almost nothing, and he gets an infinitely greater proportion out of the state, county, and city, than he pays into it, and it is claimed by some that we are generous to a point of extravagance with him. Suppose, however, that they were only given their dues. Suppose that we even went further and that as an editorial in the *Columbia State* recommended, the negro not be educated at all until education was brought to the door of every white boy and girl in the state, so that no negro could have any advantage of education over any white no matter how poor the opportunity of the whites had been. Suppose further that this idea was carried out in all the public charities, in the schools, hospitals, poorhouses, district nursing, etc.

Suppose that under such conditions every white had been given every advantage it was possible to give him, the negro none. Can you imagine that a city under such conditions could be a healthy one? Half the population in absolute ignorance; poverty, disease and immorality infinitely worse than they are at present. This would drag the other half down.

No one can deny that such a state of affairs would be bad for a community. It is impossible to keep one half of the community clean, with the other half dirty, one half moral with the other half rotten, one half healthy with the other riddled with disease.

The difference between this imaginary state of affairs and the present is only one of degree, and what is so evidently bad for the community under these exaggerated conditions is bad for it to a less and less extent only as the conditions approach the ideal.

Every dollar spent in improving the conditions of the negro race benefits the whites as well. If the whites and negroes live in the same community

STATISTICS FOR YEAR 1913.

	White, 37,000.		Colored, 42,000.	
	Rate per 100,000.		Rate per 100,000.	
Still-births	48	129.73	230	547.62
RESPIRATORY DISEASES:				
Pneumonia	32	86.48	84	200.00
Broncho pneumonia	6	16.27	16	38.09
Tuberculosis	48	129.73	135	321.42
Whooping-cough	1	2.70	1	2.38
Bronchitis	1	2.70	10	23.80
Influenza	3	8.10	20	47.62
Pleurisy	.....	.....	2	4.76
Total Respiratory Diseases	139	375.65	498	1185.61

TEN-YEAR INTERVALS.

	Tuberculosis.				Pneumonia.			
	White. Number of deaths.	Colored. Number of deaths.	White. Rate per 100,000.	Colored. Rate per 100,000.	White. Number of deaths.	Colored. Number of deaths.	White. Rate per 100,000.	Colored. Rate per 100,000.
1874–1883	549	975	346.07	610.35	.....	.....	.....	.....
1884–1893	543	1,092	277.55	506.99	157	480	80.25	222.85
1894–1903	541	1,333	214.46	499.20	289	653	114.57	238.97
1904–1913	472	1,369	52.41	421.58	379	968	122.33	298.20

the health of the whites cannot improve unless the health of the colored also improves. The health of the negro cannot deteriorate without dragging down the whites.

Selfishness, therefore, even if there were not other motives, demands that the negro be provided with better public charities, better schools, especially industrial schools, better hospitals, and the out-patient departments and visiting nurses that should go with them, better poorhouses or homes for the aged and infirm, and last but not least better laws governing their dwellings and the crowded conditions existing in them.

It will take time to accomplish these advances on account of the large sums of money required to build, equip and run such institutions, but if the absolute necessity of such institutions be constantly impressed on the public their accomplishments will be brought about at a much earlier date.

By themselves the negroes will not better themselves. Where they came from they were savages, left to themselves they remain little better than savages. Their nature is such that benefits such as public charities provide, have to be given to them, almost forced on them. It takes much persuasion to get one into a hospital.

The Japanese are a people of a different type. Already having a high grade of civilization, when brought in contact with our customs, they did not have to be forced on them. Being enterprising they adopted much of ours and in a few decades have equaled and even outstripped us in many ways. The negro in closer contact and with better opportunities remains down.

By the education of the negro he may be made a better citizen, and a more useful member of the community, and come to live in better homes and more healthy surroundings. Instead of being a burden he may come in time to look after himself. This time will be a long time, generations of time. Until this comes to pass it is necessary that the whites, out of their own pockets, in order to protect themselves, furnish the negro with public charities and better public charities than exist at present.

Finally, this paper would fail to accomplish its purpose, if it did not contain a recommendation that increased facilities should be afforded to furnish the negro with better schools and with better hospitals. It must also be recognized that the presence of this inferior race puts a burden on the white race, a burden that must be met with increased appropriations for public health purposes. This must rest on the moral obligation of a higher race to an inferior race dependent upon it; and further on the practical and selfish ground that it is impossible to protect the white people and neglect the black.

PRACTICAL REMEDIAL MEASURES FOR THE IMPROVEMENT OF HYGIENIC CONDITIONS OF THE NEGROES IN THE SOUTH.

M. L. Graves, M. D.,
Galveston, Texas.

Read before the General Sessions, American Public Health Association, Jacksonville, Fla., November 30-December 4, 1914.

The census of 1910 shows that there are 9,827,763 negroes in the United States. This number constitutes 10.7 per cent. of the total population. Of these 7,777,077 are black and 2,050,686 are mulattoes. The latter have been increasing steadily since 1850 and showed the largest percentage of increase during the last decennial period, viz: 20.9 per cent. as compared with 13.2 per cent. in the decennium ending in 1860. These facts would indicate that adultery and miscegenation are still actually on the increase and that post bellum sex immorality is considerably greater with freedom than ante bellum immorality with servitude. It is true the relative increase of the white population during the past ten years is twice as great as that of the negroes, though it must be remembered that immigration is a large factor in the increase of the white population and is of little or no importance in the increase of the negro population.

The distribution of the races makes it plain that there is no practical problem of health in the negro race outside of the South since the North has 98 per cent. of its population white, the West 95.9, while the South has 69.9 per cent. of white population and 31.1 of negro population. There is no geographical division in the United States outside of the South that has as many as 3 per cent. of negroes in its population. Two of the Southern states, viz.: Mississippi and South Carolina, have a negro population of more than 50 per cent. of the total population, while Georgia follows with 45.1 per cent., Louisiana 43.1 per cent., Alabama 42.5 per cent., Florida 41 per cent., Virginia 32.6 per cent. and North Carolina 31.6 per cent. The seventeen states which may be classed as Southern in geographical distribution, according to the census, show 8,749,427 negroes in their population.

The percentage of increase in the negro population in the last decennium is a little less than in the preceding one though the total number of negroes is considerably increased. The percentage of increase in the last ten years was 10.4 per cent. as against 24.4 per cent. for the whites. It is further interesting to note that of the 9,827,163 negroes in the United States 7,138,534 live in the country and are classed as rural, while 2,689,229

live in the cities and are classed as urban; and these facts must be remembered in suggesting efforts for improving their hygienic condition.

Among the cities of the South, Washington, D. C., leads with a total negro population of 94,446, while New Orleans is a close second with 89,262. Very few of the other Southern cities reach the 50,000 mark in the negro population.

From the negro Year Book of 1913 issued at the Tuskegee Institute and edited by Monroe N. Work, I learn that the death-rate among negroes in the South is 24 to 1000 and the average duration of life about 35 years. He states that 450,000 negroes in the South are seriously ill all the time and lose 18 days per year from work for every inhabitant, entailing an estimated economic loss of $75,000,000 annually. Of these constantly sick ones 112,000 are workers and 225,000 of the sick die annually, with an aggregate funeral expense of $15,000,000. He believes that 45 per cent. of these deaths may be readily prevented. This interesting pamphlet also asserts that $300,000,000 is the economic loss to the South from sickness and death among its negroes alone and that it would pay the South to expend $100,000,000 annually in improving the health conditions of the race.

Now, I am asked to suggest practical remedial measures to improve conditions responsible for the morbidity and mortality among our negro population. "Practical" is frequently a difficult term to define and may mean a different thing to different minds. But usually we understand by it something workable, something capable of application or execution; and in order to meet this definition it must appeal to the common sense of intelligent and informed men. Moreover, a plan may be easily utilizable for temporary, small results, while years of patient work may be necessary to lay the foundation for a great or successful undertaking. Waiving innumerable suggestions that might be made, I beg to call your attention to the following important factors in prosecuting so large a problem as the one assigned to me to a successful conclusion.

(1) *A National Department of Public Health in the United States Government* which shall control all the operations for public health anywhere within its borders: Some such organization as is embodied in the Owen Bill before the United States Senate, which shall organize, collect, coördinate and direct all the agencies for the public health in the United States. I am told that every ism and organism of irregular medicine, every cult and order of pseudo-science, religious and otherwise, is actively organized and arrayed against such a proposition.

In a recent conversation with Congressman Henry, chairman of the Rules Committee of the House of Representatives, he told me that within a week following the introduction of his resolution providing for the creation of a permanent Committee in the House on Public Health, he received a thou-

sand letters from those interested in opposing it. For myself, born and raised in the South, and impregnated with the ideas of State Rights, I am firmly convinced that when it comes to sufficient and efficient protection of the public health it will require the powers of the National Government to do it. Political myths and party shibboleths should no longer be permitted to retard our progress and cause such enormous waste of valuable lives and the economic loss from preventable illness and death.

At my home city at the entrance of a great port of the United States stands a state quarantine department, insufficient and unable to properly safeguard the public health, in active and sole control of the port quarantine, while the United States Government just across the channel maintains a large number of empty hospital pavilions ready and waiting for service because the state of Texas has not yet learned that the Federal Government is the only agency in this country capable of meeting such a responsibility. Twice within the last decade the city of New Orleans has called upon the Federal authority to stem the tide of dreadful infections, and San Francisco has sent its Macedonian cry to Washington for help when *Bacillus pestis* invaded the Western coast. Defects in local and state control of dangerous diseases was witnessed, in striking manner, a few years since in the case of the leper Early. Three or four states played battledore and shuttle-cock with this afflicted man, and the newspapers were full of sensational accounts of indignant and frightened citizens inflicting their own quarantines to the disgrace of our public health service.

The last leper I saw was a public prostitute from Louisiana who probably contracted her disease in Mexico and, if we are to believe Prince A. Morrow's theory of the conveyance, she may have left behind her a string of incubating lepers from New Orleans to Chihuahua. Our methods of communication and conveyance are now so multiplied and our points of contact so numerous that state borders are no longer able to afford protection from epidemic or sporadic cases of communicable disease. As proof of this we have only to recall the periodic recurrences of smallpox, the widespread occurrence of hookworm and of pellagra and the present serious epidemic of foot and mouth disease in the cattle of the country.

Our local state, county and municipal health departments throughout the South are often inefficient because of political appointments with neither education, experience nor professional fitness to be entrusted with such responsibility. When we contemplate the efficiency of the National banks and their regulation by the Federal Government; when we consider the respect and fear in which our Federal courts are held by wrong-doers everywhere, it is no wonder our minds turn to the National Government for protection of the health and economic efficiency of our people.

(2) *Private philanthropy to finance a Commission of Research* among the negroes of the South to improve health conditions. It is certain that com-

mittees or commissions unpaid and without authority, whether appointed by social or medical organizations, will accomplish nothing. There must be a thorough organization with well-trained and capable men put into the field, and for such services considerable sums of money must be expended. The great work already done by the Hookworm and Pellagra Commissions, both made possible by generous donations of citizens interested in the public health, should inspire some other wealthy man or woman to go and do likewise and organize a Research Commission to study health problems among the negroes of the South. I could hope that such a philanthropic spirit may be found among the sons or daughters of the South.

(3) *The enlargement and encouragement of the educational efforts of the institutions of the colored people* throughout the country, such as Tuskegee, Hampton, Wilburforce University, and Payne and Layne Colleges, Straight and Southern Universities, etc. Each of these institutions is doing a useful work among its people, and coöperation of bodies like this with suggestions and practical help would no doubt be gratefully received.

(4) *The inauguration of public health and preventive medicine courses of instruction* and degrees in every medical college of importance throughout the country, so that an educated and trained body of sanitarians may be supplied to states and counties and cities for their health officers. Until such a system exists neither the white nor the negro races will receive a tithe of protective value of government control of the health to which they are entitled. The efforts of the American Medical Association, the American Public Health Association and of state societies and health boards to educate the public and to put lecturers in the field is a step in the right direction; but few of these persons are trained to speak with authority on public health matters and they can neither arouse the interest nor secure the active support of the public. Men must know what to say and what to do, and when this trained service is rendered to the public and results become apparent, then the leaven will begin to leaven the whole lump of our citizenry.

(5) *The organization of efficient state, county and municipal health departments* with every modern laboratory equipment and with well-trained, well-paid and full-time health officers in charge of same not subject to political removal.

(6) *Collaboration with churches and social welfare workers* everywhere in the newer movements looking to the welfare of the race. The churches are ready and anxious to join in this service; their pulpits, their pastors, and their congregations may be utilized fully. They must, however, be furnished with simple, scientific and useful information. The colored preachers and their congregations and associations can be depended upon for their full support and coöperation.

(7) *The public schools with the active assistance and direction of the school physicians and the teachers* may be made a most useful agent in the dissemination of health education. Booker T. Washington advises me that "In recent years there has been a great awakening on the part of colored doctors, preachers and teachers with reference to improving the health of the negroes and there will be no difficulty in securing their coöperation." Public health lectures illustrated by lantern slides and moving pictures may be made to draw large audiences in our colored churches and schools, and educational propaganda of the greatest importance undertaken and carried to a successful conclusion.

The negro race is well nigh wholly deficient in a knowledge of the elementary rules of hygiene and sanitation, both in the cities and in the country districts, and properly conducted educational efforts on ventilation, sewerage, water supply, bathing, the care of milk, and other foods, and the simpler methods of conveyance of communicable disease, would meet with intelligent reception when presented in this way.

The venereal peril will be perhaps the most difficult problem to handle, and yet I am persuaded that the right kind of information given by thoroughly informed men in a suitable manner must be productive of great good. Investigations should be made by our scientific institutions with our newer methods of blood examinations, such as Wassermann, Naguchi, and the gonococcus fixation test to determine the actual facts about these infections, and present them in an intelligent way to both races. The Department of Clinical Pathology of the University of Texas is now engaged in testing out one of these infections in all colored patients admitted to the wards of its service. It must be admitted here that our white population is constantly menaced by illness among the negroes, and we have never interested ourselves sufficiently in the servant quarters and habits. Infections like syphilis, tuberculosis, malaria and others are constantly being conveyed from negroes to white persons directly.

(8) Too much stress can hardly be put upon the necessity of *appeals to landlords throughout the country and in the cities* to improve living conditions among the negroes. Principal Washington tells me that 75 per cent. of the negro families of the South live in rented houses, and all of us know that many of these are poorly constructed, insufficiently lighted, and provided with only the crudest bathing or sewerage facilities, and often situated along the creeks and low places where the water stands and stagnates, where insects breed and thrive, and in the cities too frequently near the dumping grounds of city trash and filth, where flies and mosquitoes and other insects propagate and convey infection to the negro servants who in turn communicate it to the whites for whom they labor. There are many cities throughout the country where sewers, lights, water supply and other necessary sanitary measures are not carried to the poorer quarters of the

negroes on account of the cost, and it is incumbent on those interested in the public health to see that they secure a square deal in this respect, and if for no other reason, the selfish one of self-preservation may be invoked to stir us to activity. The health of the white people of the South is dependent upon the health of the negroes of the South and the sooner this fact is recognized and acted upon, the sooner and more certainly will our health conditions improve.

Disfranchised and unable, by lack of education or personal knowledge, to protect themselves or to secure readily these benefits of a larger and better civilization, is it not the duty of thoughtful and just white citizens of this country to see that these necessary measures for the protection of the public health are secured.

SYPHILIS AMONG INSANE NEGROES.

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Read before the General Sessions, American Public Health Association, Jacksonville, Fla., November 30–December 4, 1914.

In discussing the subject of syphilis among insane negroes, it is necessary to refer to the prevalence of this disease in all races, and especially in the negro race as a whole, so I hope you will pardon the many references that I shall quote to emphasize the importance of this particular subject in a general way.

Until a few years ago syphilis in the negro had received but little attention from medical men and health officials, and at the present time is not regarded as important as it should be. This is, in a great measure, due to the lack of accurate statistics on the frequency with which the disease occurs in the negro; and also due to the rather poor facilities (or lack of the same) that are offered the negro in the South for receiving treatment in hospitals and at free dispensaries.

Three fourths, or over, of the entire negro population is in the South Atlantic and East South Central States, embracing the District of Columbia and twelve states, and until recently the majority of these states were outside the registration area for deaths as prescribed by the United States Census Bureau; consequently, accurate data as to the actual causes of death in the negro race is not available except in a few states and some of the larger cities.

I am supplementing this paper with a tabulated report of the number of deaths from syphilis in both the white and negro race for the last five years within the registration area. These reports were kindly furnished me by Director W. J. Harris, and Acting Director Austin of the Census Bureau. (See page 221.)

Complete morbidity statistics are lacking in many states and cities, other than those of the South. This is especially true of the latter regarding disease in the negro.

Syphilis, according to Trask,* is a reportable disease in only six states and very few of the larger cities.

With the above facts in view, the importance of gathering accurate mortality and morbidity statistics in the South cannot be over-estimated, especially if we expect to study intelligently the diseases most prevalent in the negro.

Some data and personal observations that I wish to present to you will, I hope, more forcibly emphasize what I have to say regarding general paralysis and syphilis in the negro race.

* Trask, A Discussion of Vital Statistics; Supplement No. 12, U. S. Public Health Reports, April 3, 1914.

Murrell, of Richmond, Va.,* was one of the first, if not the first, to call attention to the prevalence of syphilis in the negroes of the South, and he predicted that in another fifty years an unsyphilitic negro would be a rarity. This, in my opinion, is not the view of an extremist, especially when we consider that the large majority of the population is of the care-free class who do not even attempt to prevent any disease; add to these the intelligent and educated class who will assume the same risks that a large proportion of the whites do and you have about 95 per cent. of the negro race who are most likely to contract syphilis or other venereal diseases.

Murrell further emphasizes the difficulty met with in getting a syphilitic negro to take treatment. Anyone present who has ever attempted to treat one can attest to that fact, I am sure. And insufficient treatment of any case of syphilis, as we well know, means in all likelihood a central nervous involvement followed by general paralysis, tabes, etc.

Inherited syphilis and its possible effects for several generations cannot be too forcibly brought to your attention, and a recent article by Stoll† emphasizes this point very strongly. In an examination of 68 individuals; 33 apparently healthy and 35 with obvious ailment, he found that 39 per cent. of the former gave a positive luetin test, while 88 per cent. of the latter gave either a positive Wassermann or luetin.

Jeans and Butler‡ in an article on "Hereditary Syphilis in Children" emphasize the following: That hereditary syphilis is more frequent in illegitimate than legitimate children, and also in St. Louis, syphilis is from two to three times as frequent in the colored as in the white race.

It is hardly necessary here to call attention to the fact that a large number of negro children are illegitimate. Murrell, Hazen, and others have emphasized this particular point in its relation to the prevalence of syphilis in the negro race.

There is no means by which we can ascertain the number of already defective negroes who may have engrafted upon these defects the influence of ancestral syphilis; they are undoubtedly numerous as evidenced by the number of negroes confined in asylums and prisons of the South, together with those we meet in civil life who show unmistakable stigmata, both physical and mental, that medical science has taught us to attribute to syphilis.

Green,§ in a very recent article, in which he compares the frequency of the different psychoses in the white and negro races, and based on the admissions for five years at the Georgia State Sanitarium, shows that the

* Murrell, Syphilis in the American Negro; J. A. M. A., March 12, 1910, No. 11, Vol. 54.

† Stoll, The Late Manifestations of Inherited Syphilis, etc., J. A. M. A., October 31, 1914, No. 18, Vol. 63.

‡ Jeans and Butler, Hereditary Syphilis as a Social Problem; Amer. Journal Diseases of Children, November, 1914, No. 5, Vol. 8.

§ Green, Psychoses in Negroes—A Comparative Study; Journal of Nervous and Mental Diseases, November, 1914, No. 11, Vol. 41.

senile types are nearly 3 per cent. higher in the negro; that the manic depressive type exceeds the same type in the whites by practically 6 per cent.; and while the negro shows 7.3 per cent. general paralysis, the white patients showed only 3.1 per cent. These percentages are based on a total admission of 5,410 for the five years, 2,119 of those being negroes and many of the latter being from the rural districts. The following percentages for paresis as to the sex and race for the five years, are also interesting and significant: White males 4.5 per cent., white females 1.2 per cent.; negro males 10.2 per cent., and negro females 4.2 per cent.

Hazen, in a very recent article* shows that out of the total admissions to Freedmen's Hospital, District of Columbia, for 11 years, there were admitted 30,021 negroes and of that number 881 or 2.26 per cent. were admitted for syphilis against 92 or 4.35 per cent. out of 2,160 whites during the same period. While the negro seems to have the best showing here, and also apparently an equal or slightly higher percentage in other figures quoted by Hazen, I think it should be recognized that a higher average of intelligence and knowledge exists in the negroes of Washington than in those of other localities. Furthermore, a reference to the Census Bureau's tabulated report shows that the negro death-rate from syphilis in Washington, for the years 1910, 11, 12 and 13, exceeded the white deaths in actual numbers, practically twice as many negroes (or colored) dying from syphilis in 1913.

Hazen gives other figures which are very significant to me and which emphasize particularly what I wish to bring out regarding the latent effects of syphilis and insufficient treatment in the negro. In a personal study of over 2,000 consecutive cases of skin diseases in the negro race and an equal number in whites, he observed the following types and proportions of syphilis in the following respective numbers:

	White patients.	Negro patients.
Secondary	22	68
Tertiary	12	39
Gumma	14	80
Hereditary	10	42

Other figures for other types of the disease are given in this series but are of minor importance here.

These figures, as given by Hazen, show that there is apparently much untreated syphilis among negroes, and these observations alone should stimulate a further study of this disease in the negro race, and especially in the larger cities of the South.

* Hazen, Syphilis in the American Negro; J. A. M. A., August 8, 1914, No. 6, Vol. 63.

DEATHS AMONG WHITE AND COLORED POPULATION FROM SYPHILIS.

State and City.	Per cent. of population, April 15, 1913.		White.										Colored.									
			Number of deaths.					Death-rate per 100,000 population.					Number of deaths.					Death-Rate per 100,000 population.				
	White	Col'd.	1909	1910	1911	1912	1913	1909	1910	1911	1912	1913	1909	1910	1911	1912	1913	1909	1910	1911	1912	1913
Kentucky	88.6	11.4	*2	*2	66	56	70	*2	*2	3.2	2.7	3.4	*1	*1	74	74	60	*1	*1	28.1	27.9	22.5
Maryland	82.0	18.0	32	43	75	90	73	3.0	4.0	7.0	8.3	6.7	48	50	62	72	73	20.6	21.5	26.5	30.4	30.5
North Carolina†	64.8	35.2	*2	8	14	13	17	*2	3.4	5.8	5.2	6.6	*1	23	33	28	36	*1	18.1	25.0	20.6	25.8
Virginia	67.4	32.6	*2	*2	*2	*2	58	*2	*2	*2	*2	4.0	*1	*1	*1	*1	148	*1	*1	*1	*1	21.3
Cities of 100,000 population or over in 1910																						
Birmingham, Ala.	60.6	39.4	3	3	5	3	6	7.1	3.7	6.1	3.3	6.3	10	40	34	46	39	35.9	76.1	63.3	77.6	62.5
Washington, D. C.	71.3	28.7	17	13	21	13	20	7.3	5.5	8.7	5.3	8.1	15	25	22	24	41	15.9	26.3	22.7	24.4	41.1
Atlanta, Ga.	66.4	33.6	3	3	—	3	12	3.3	2.9	—	2.7	10.4	5	2	10	4	13	10.8	3.8	18.6	7.1	22.3
Louisville, Ky.	81.9	18.1	3	7	7	9	16	1.6	3.8	3.8	4.8	8.4	3	12	11	11	5	7.4	29.6	26.7	26.5	11.8
New Orleans, La.	73.6	26.4	26	21	32	34	30	10.6	8.4	12.6	13.2	11.5	15	23	42	29	44	16.9	25.6	46.0	31.3	46.7
Baltimore, Md.	84.8	15.2	21	36	66	72	54	4.5	7.6	13.8	14.9	11.1	28	33	34	43	52	33.1	38.7	39.5	49.5	59.4
Memphis, Tenn.	59.9	40.1	7	3	6	15	12	10.1	3.8	7.5	18.2	14.3	9	4	14	16	16	18.9	7.6	26.3	29.1	28.5
Nashville, Tenn.	66.9	33.1	4	5	3	4	6	5.5	6.8	4.0	5.3	7.9	8	9	14	12	9	21.9	24.6	38.0	32.2	23.9
Richmond, Va.	63.4	36.6	6	7	13	11	13	8.2	8.6	15.9	13.2	15.4	16	33	26	24	25	37.5	70.5	54.9	49.8	51.2

* Not admitted to registration area until a late date.

† Includes only municipalities having a population of 1,000 or over in 1900.

During the year 1910, 4,384 negroes and 39,629 native born whites were admitted to the insane asylums of the U. S.; 4.9 per cent. or 216 of the negroes were general paretics; 2,618 or 6.6 per cent. of the whites were general paretics.

Hazen, in a study of 2,000 consecutive cases of skin diseases in the negro and an equal number of whites, found over three times as much secondary, and tertiary syphilis in the negro. He also found nearly six times as many gumma, and over four times as much hereditary syphilis in the negro.

Dr. Dunbar Roy, of Atlanta,* says that "It is surprising the amount of nose and throat syphilis you find among the negroes of Atlanta."

DuBose,† in a recent article in the *Southern Medical Journal*, calls attention to the lack of hospitals for negroes in the South, and emphasizes the high death-rate from syphilis and tuberculosis among them; he says, "Their indisposition is more physical than temperamental."

According to the tabulated report furnished me by the Census Bureau, and figures given by Trask in a discussion of vital statistics,[2] the number of deaths from syphilis in Birmingham during 1912 were 46 in the negro race, while for the entire population during the same period, 14 deaths occurred from diphtheria, 9 deaths from measles, and 56 deaths due to typhoid fever. For the same period in Richmond, Va., 24 negroes died from syphilis, while the deaths from diphtheria, measles, and typhoid fever, for the entire population were 8, 1, and 22 respectively. The entire state of Maryland in 1912 had 20 deaths from measles and 229 deaths from typhoid fever, while the city of Baltimore had 43 negro deaths from syphilis against 72 white deaths from the same disease and Baltimore's negro population is only slightly over 15 per cent. of the total according to the 1910 Census.

These figures further emphasize the high death-rate from syphilis in the negro, and even if we take into consideration the acute character of diphtheria, measles, and typhoid fever, we still must admit that this is a very poor showing for the negro, because we take every precaution known to medicine and sanitary science to prevent the latter diseases in the negro as well as the white man, yet we are doing practically nothing to prevent syphilis in either.

In a personal communication from Dr. Lynch, Professor of Pathology in the Medical College of South Carolina, he has given me permission to quote some conclusions arrived at by him in a comparative study of a large number of negroes with the aid of the Wassermann reaction and the blood pressure apparatus. These conclusions are as follows:

"1. Syphilis occurs in from 50 per cent. to 60 per cent. of the major class of our Southern negroes.

"2. It is more frequent in the women than in the men.

"3. By comparison of blood pressure and Wassermann reaction there seems to be no relationship between high pressure and positive Wassermann.

"4. The ravages of the disease were not severe in the individual of this series.

"5. Single miscarriages and still-births are not apparently more frequent in the syphilitic than in the non-syphilitic, but the habit of miscarrying is much more prominent in the former.

* Roy, See page 1568, J. A. M. A., same as No. 3.

† DuBose, The Condition of the Negro in the South; Southern Medical Journal, November, 1914, No. 11, Vol. 7.

"6. Syphilitic women are not as fertile as the non-syphilitic and their children do not survive as well as those of the latter."

The 1910 Census of Insane and Feeble-Minded Institutions of this country showed that on January 1, 1910, there were in the insane asylums 12,910 negro inmates, and that over 8,000 were between the ages of 20 and 54 years, the period in life when we would most expect manifestations from central nervous lesions of syphilitic origin.

During the same year 4,384 negroes were admitted to insane asylums, and over 3,000 of this number were 20 to 54 years of age. Now, during the same period 4,127 cases of general paralysis all colors, were admitted, and of this number 216 or 4.9 per cent. were negroes as compared to 2,618 cases, or 6.6 per cent. in the whites, and the latter percentage is figured from 39,629 native born whites.

I have personally made routine Wassermanns on all patients admitted to the Georgia State Sanitarium from January 1 to November 15, this year, and the following results further emphasize the prevalence of syphilis in the negro. Eleven hundred and ninety-four patients were admitted during this period: 420 white males with over 6 per cent. positive Wassermanns; 351 white females with over 5 per cent. positive; 255 negro males with over 16 per cent. positive; and 218 negro females with over 16 per cent. positive Wassermanns. Here is practically three times as much syphilis in the negro as in the white and confirms the observations made by others. All Wassermanns here reported are clean-cut positives showing complete inhibition of hemolysis. Weak or doubtful ones are omitted.

Twenty-two of the negroes and fourteen of the whites were general paretics, the diagnosis being confirmed by Wassermanns, cytological examinations, gold chloride tests of the cerebro-spinal fluid and also by the opinion of the entire staff.

Ivey,* in a Wassermann survey of over 600 negro patients in the Mt. Vernon Insane Hospital of Alabama, found over 25 per cent. positive in the males and over 27 per cent. positive in the females.

Doctor Terry,† of Jacksonville, in discussing the negro as a public health problem before the Southern Medical Association last year, gives figures which show that the average death-rate from venereal diseases in this city for five years (1908 to 1912) was six times greater than in the whites for the same period.

To quote Doctor Terry's conclusion in the above paper which is very appropriate and applicable here: "The burden of this great health problem must devolve finally upon the Southern sanitarian and sociologist. It has, I believe, been sadly neglected by us all in the past and yet

* Ivey, The Wassermann in Insane Negroes; Medical Record, October 18, 1913.

† Terry, The Negro, A Public Health Problem; Southern Medical Journal, June, 1914, No. 6, Vol. 7.

it is most intimately concerned with the welfare of the entire South; accurate observations, careful social surveys, experimental methods must all play a part. No field is probably so barren of sanitary achievement as this and none offers a more worthy occasion for painstaking effort with promise of far reaching results of the utmost import to the Southern states."

Personally I have no particular or special remedy to offer as a solution of the syphilis problem in the negro race, however I hope the data and statistics which I have given you will awaken new interest in this all important subject, and that this Association, as a national organization, will recognize that syphilis as a cause of insanity in the negro race (as well as the white) is rapidly becoming one of the most important public health questions in the South. It is a question that we cannot overlook, and we owe it to this race and ourselves for both economic and sociologic reasons, if for no other, to do more for these unfortunates in education on public health problems, and to see that better facilities are offered them in the way of treatment.

THE RELATION OF PUBLIC HEALTH NURSING TO THE PUBLIC HEALTH CAMPAIGN.

ELLA PHILLIPS CRANDALL.

Read by title before the American Public Health Association, December 1, 1914, Jacksonville, Fla.

The social standards of society, as we know them today, have been growing through many centuries out of four or five stages of charitable impulse. These stages can be fairly well indicated as follows:

1. To relieve distress;
2. To give adequate relief;
3. To restore self-support;
4. To prevent untoward conditions in general and sickness in particular;
5. To reconstruct society on a conscious social basis.

There has always been some recognized exponent or agent of these organized efforts toward human betterment. For instance, the deaconesses of the early church; the monastic, the military, the secular orders of the twelfth to seventeenth centuries inclusive, whose activities culminated in the extraordinarily clear and practical pronouncements of principles and programs of relief set forth by St. Vincent de Paul, which still form the basis of much of our best modern effort; and in our own times, the well-known German scheme of voluntary friendly service, which was conceived and practised unto the one great end of preserving self-respect through restoration of self-support without resort to public funds.

In all of these, the care of the sick and injured has ever been a constant and important part. No other misery was more wretched, no other need of relief greater than that due to physical ills. Therefore, the office of nurse is an old and honorable one and has become an integral part of all missions of alleviation, whether in hospital or home. She, too, has partaken of the same actuating motives that controlled other servants of humanity.

For the purposes of this discussion, we shall confine ourselves to the work of the extra-mural nurse, who visited the needy sick in their homes, relieving the suffering and curing the ills she found in so far as lay in her power.

As long as the causes of misery were quite generally regarded to be only two; *i. e.*, poverty and drink, and at the same time poverty was considered inevitable and the drink habit incurable, the nurse had little or no incentive to do more than relieve where she could and pass on to the next victim. She neither searched for nor saw any relation between her patient's physical ills and his living or working conditions; she thought little or nothing of the possible effect of his disease upon his family and neighbors; it seldom occurred to her to look to other than "the will of God" for an ex-

planation. Yet in this the nurse was not peculiar. Medical science was very far from exact—the medical profession could give but little light on the origin of disease; its practice consisted largely in treating symptoms rather than causes, and the nurse had no alternative but to carry out orders.

Gradually, however, physicians and chemists and bacteriologists such as Jenner, Pasteur, Koch, Lister, Flexner, and Carrell, gave to the world their marvellous discoveries of bacterial life. The causes and sources of some of the worst scourges were found and the means alike of cure and prevention were established in the vaccines and anti-toxins and serums. No longer was the human race to be held at the mercy of smallpox, of hydrophobia, of diphtheria, of tuberculosis, of malaria, of yellow fever, of typhoid fever—even the bubonic plague and Asiatic cholera and anthrax had come under some measure of control.

Here, then, was presented a wholly new aspect to the nurse's mission, an entirely new motive for the pursuit of her work, which came to her along with the whole civilized world. Thoughtful people were thrilled with these new messages of increased expectation of life. Almost immediately scientists, physicians and nurses, city and state departments of health began to turn their attention more to prevention than to cure. Everyone commenced to think and to work in terms of health rather than sickness, and with measurements of community rather than individual health. It was not enough for scientists to hold in their keeping these new storehouses of knowledge. Their findings must be interpreted into terms of laws and ordinances—administrative machinery must be constructed and set up to carry into effect these beneficent protections to human life.

All of these steps were taken first in response to the call to wipe out the great white plague. New laws were enacted, new ordinances were passed, new appropriations were made, new departments and laboratories were established, new hospitals and sanatoria and other institutions were built and equipped. But still one indispensable factor was lacking—and that was an interpreter of this new-found knowledge and recently made laws.

Scientific knowledge in scientific terms does not greatly increase the popular intelligence regarding the means of prevention of disease. It must be translated into the simplest terms—nay, more, it must be taught by demonstration, patient, painstaking, oft-repeated demonstration. Florence Nightingale said years ago: "The only word that sticks is the word that follows work." So, when the scientists and physicians, the law-makers and the law administrators began to look about for this last essential agent in their great program of health protection, they promptly said that there are district or visiting nurses in many of our cities, going in and out of the homes of the people. Their entré is assured, their service is welcome, their friendship is accepted, their advice is trusted, their injunctions are heeded. We can employ them to do our work, to carry our

message, and in the past this is what they did. The service of the visiting nurse was demanded as never before. To her technical training was hurriedly added some special knowledge of the disease and its treatment which she needed to make her both an intelligent student and teacher of the conditions that would confront her. By degrees, it became evident to herself and to other people that she needed much more preparation if she were to adequately fulfill her function in this one great movement against tuberculosis. One by one they found she must know the public health laws and ordinances, the local and state agencies on which she could and should call for direction or assistance in questions of housing, sanitation, food and milk and water supply and protection, poor relief, custodial and correctional care. She must know how to be an intelligent applicant for the services of these bureaus and various philanthropic agencies. In fact, she had to become a good diagnostician of social and economic conditions of the families to whom she went.

What has been said of the campaign against tuberculosis and the nurse as a factor in it, must be reiterated with even greater emphasis when we turn our attention to that farther reaching and vastly more hopeful movement, known as school-hygiene. Those of us who think of it in terms of medical inspection and school nursing, need to view it in its larger aspects. Although the early conception of it could be summed up in two words, "health police," it now starts far back of the child himself. It includes the construction of the building; the provision for heating and lighting and ventilation; the seats and desks; the blackboards—their character and location; the provisions for baths and gymnasiums. It takes into account the drinking fountains, toilet facilities and cloak rooms; the methods of and times for janitor service. It considers the kind of paper that shall be used in text-books and the width of their columns and many other matters of equal importance. Then, having done what it could to make the building and its equipment serve the child's best interest, it turns its attention to his personal well-being.

The first idea of meeting this need was to provide medical inspectors, who would not only detect as early as possible and exclude children suffering with communicable diseases, but would examine all the children and send written messages to parents telling them of their child's physical defects and urging them to have them treated by the family physician. This experiment was watched with much interest and results were eagerly waited for, but when those results were tabulated the returns were sadly disappointing. For example, it was found in New York City where the service had its origin (so far as the United States is concerned) under most favorable conditions, that only 6 per cent. of the instructions sent home by the physicians were heeded. This meant practically 94 per cent. waste of public money appropriated for an indisputably important cause.

It must not be given up; but to hold it, it must be radically improved. What was the remedy?

The answer came, as it had to the tuberculosis workers. A follow-up agent is the solution of our problem, and the public health nurse is naturally and logically that agent. Again, new scientific studies, new laws and ordinances and appropriations, new administrative machinery were insufficient because incomplete without this indispensable factor of interpretation of the social conscience, which was trying to serve the public, but could not serve without the public's coöperation—and coöperation naturally would not be granted until the people could understand.

With the introduction of the nurse into the program of school hygiene various things happened; for example, first, as compared with 6 per cent. of the instructions from physicians being carried out in New York City, the reports a few years later showed 84 per cent.; and whereas prior to the advent of the school nurse, 57,000 children had been excluded in the same length of time. Second, the home visits brought to light countless conditions of similar nature in the children of pre-school age, which offered quite as strong a claim on the public as did the ills of the child of school age. Third, the increased staff made possible routine inspections by the nurses at frequent intervals as a valuable supplement of the medical examinations, resulting in more effective work and a larger scope of work.

Here again, however, the nurse was inadequately prepared for this new demand, which gradually, for the first time in the history of nursing so far as can be ascertained, assumed the proportions of some minor functions of the physician, actually forced upon her by physicians themselves, first in small towns where the doctors were called upon to do gratuitous work for the schools (because the community could not afford to employ both doctor and a nurse) and later in several larger cities. Nurses were loath to assume these added duties against which they had been warned and enjoined for many years. Although to the practitioner of medicine they were insignificant indeed, when assumed by a nurse they became a serious responsibility.

To meet it, she must devote herself diligently to special study. She found her knowledge acquired in the training school of minor eye and skin conditions, contagious diseases and oral and orthopedic affections, utterly inadequate. So in place of the books and lectures and conference programs on tuberculosis, the school nurse applied herself to studies that would most quickly and satisfactorily fit her for work among children.

Departments of health and education, employing school nurses, have done much to make such study possible along with the day's work, while some women have spent considerable time in postgraduate courses—including theory and practice—for the sake of qualifying for the largest possibilities of this greatest of all public health movements.

As has been suggested, the home visits of the nurses discovered similar ills in the children of pre-school age, which they were eager to care for. Moreover, when the parents saw the benefits derived from the treatment of the older children, they clamored for the same for the younger ones. And, third, when to the students of social and public health problems and to departments of health and education and to bureaus of estimate and apportionment and to taxpayers, it had been conclusively demonstrated that the returns for the school hygiene appropriations were not only better physical beings, but that numberless mental and moral handicaps were removed, that laggards were able to do standard work, that the cost of repeaters was thereby proportionately reduced, they added their sanction to the voice of the people and of all school nurses and provided for the service now known throughout the world as infant welfare.

Here again, as in tuberculosis and school hygiene, the life of the infant was found to reach far outside the home. Its claims for life and health led directly into the domains of sanitary inspection of milk and water supply and of housing codes; it made new claims on parks and playgrounds; it called for distributing centers of safe milk and free ice; for babies' clinics and open-air camps and hospitals; for mothers' conferences and little mothers' classes.

Once more it was found that sanitarians and physicians and nurses together could not get at the root of the evil until some one followed the mothers to their homes and there interpreted, by demonstration, the instructions given in the milk station or class room or conference. It was the lesson in the care and modification of milk with the utensils which the mother herself must use that insured her understanding of the doctor's directions. It was the repeated visits of the nurse that kept up the mother's enthusiasm sufficiently to overcome her weariness or the indifference and incredulity of her neighbors. It was the opportunity gained by these frequent calls that made it possible to impart the larger lessons of regular feedings and regular sleep, of fresh air and sunshine, of daily baths and correct clothing—in short, of the hygiene of infancy and indirectly the hygiene of personal and home life for *all* the family.

Again the nurse was chosen to round out this program of health protection and education. Here, she immediately found herself involved in the inexhaustible problem of unlicensed midwifery and preventable blindness; of prenatal influence reaching from the laws of heredity to the mother's knowledge of and ability to practice the hygiene of pregnancy—vexed questions indeed, which obstetricians and eugenists and biologists and psychologists have been studying and all have agreed that prenatal care is an indivisible part of infant welfare propaganda. In consequence, prenatal nursing and prenatal clinics and mothers' schools have been organized—these in far less numbers as yet—but all serving to show the

direction of effort dictated by the newly awakened social consciousness and conscience. In fact, about forty such enterprises are now in operation in the United States, though there are not as yet to our credit any laws commensurate with those of Germany, France and England, restricting the labor of and providing pensions for pregnant and puerperal women.

Once more the nurse's education has been found deficient. To be expert in this special work, she needed to add materially to her limited knowledge of infant life, its ills and dangers, regimen and care. But with both a woman's and a nurse's instinctive response to the appeal of infancy, she quickly availed herself of lecture courses, class instruction, new books and clinical opportunities, which would round out her technical training and fit her for infant welfare work.

These three great movements, represented as they are by national and international conferences, express the world's largest demand on public health nurses; but there are other developments which claim our serious attention, chief of which are industrial welfare work and medical social service. For a number of years managers of large industrial plants have become increasingly conscious that the health and general well-being of their employees is a valuable asset, and to that end have introduced many so-called welfare propaganda, such as hot lunches, rest and reading rooms, baths, club houses, educational classes, hospitals, medical inspectors and visiting nurses. Many who have not granted the value of the foregoing have voluntarily installed safety devices and established one form or another of insurance to cover sickness and accident benefits and loan funds. To the latter much impetus has been given by safety commissions and "safety first" campaigns, while workmen's compensation and employers' liability acts have rendered obligatory great advances in the protection of laborers against industrial hazards. Within the current year a National Council on Industrial Safety has been organized and has already placed much to its credit on "the ledger of human balances."

While no reliable figures are available, it is rather generally conceded that no single factor in this significant movement has accumulated more definite or prompt results than the visiting nurse, whose work in most instances is by no means confined to the shops or stores or mines or mills, but follows the worker to his home and includes the family in its care. Even this family service is given at the company's expense, for some employers have proven to their satisfaction that such an outlay *is fully* justified by the returns.

Again, however, we are obliged to acknowledge that the nurse called to this kind of work has been quite unfamiliar with industrial and economic questions, such as workmen's compensation and employers' liability laws, industrial hazards, safety appliances, the laws governing sanitation, fire protection and other labor conditions, all of which are more or less directly

connected with her service. Consequently, her usefulness has been on the whole gauged by her ability and desire to understand, in some measure at least, these controlling elements of industry and commerce. She too, then, must be given opportunity for some special postgraduate study.

One more specialized form of public health nursing must have mention here. In these days of efficiency requirement (which definitely includes the question of economy), in these days of preventive medicine, physicians and managers of hospitals, dispensaries and clinics have clearly recognized the need of a medical social service agent, trained to supply the social diagnosis on which the clinical one very often rests, and to provide social treatment which frequently becomes an important factor in effecting a complete and permanent cure.

Although organized medical social service is hardly more than six years old in America, it has become an integral factor in many hospitals, dispensaries and similar institutions, and others are constantly organizing such departments. Perhaps more than in other fields the nurse's worth in comparison with that of the lay social worker has been contested. Her technical training has been utterly inadequate to qualify her for work which was almost entirely social in character. Without additional preparation she is obviously handicapped and unable to enter her rightful place of expert adviser in the nursing aspects of this great work; she could not assume her role of authorized servant to the people. She is still only the handmaiden of the doctor rather than a coöperator and counsellor with the practitioner of preventive medicine. On the other hand, the lay social worker, perhaps equipped with a college education or a school of philanthropy course, but unprepared to deal with problems which have their origin in illness has been freely accorded the distinction of "peer" to the physician. When, in this connection, consideration is given to Edward T. Devine's statement that in 75 per cent. of the cases that register with the Charity Organization Society of New York City the primary cause of poverty is illness, the claim is not unwarrantable that a nurse's knowledge, if not her experience, is an indispensable factor in the education of the medical social worker. Granting, however, that only nurses with social vision and social instinct and special preparation for social work are rightly eligible to this big new field, what constitutes that special preparation?

In answer to this question, it is not too much to say that to be the versatile woman which the demands of this office bespeak, the nurse should have at her command at least some of the knowledge required in all the other branches of public health nursing above described, for practically every day's program will bring under her care people of all ages and conditions.

This latter statement suggests the conclusion to which it is designed this paper shall lead. If, in direct response to the awakening social conscience,

the public has called to its aid in quick succession and as several parts of one great cause, tuberculosis nurses, school nurses, infant welfare nurses, industrial nurses, and social service nurses, along with many other agents enlisted in the same enterprises, and if the public demand has grown faster than public funds to supply the demand, how can the present situation be met?

It is interesting to trace the growth of these several expansions and specializations of what was once generally known as visiting nursing. These divisions of labor occurred in the beginning because funds are appropriated for specific purposes and could not be diverted to others. Later their exponents came to believe (and a great many do still) that thorough and effective work could only be done by people exclusively devoted to one kind of work. But while separate staffs of nurses doing these various forms of work have been maintained in many of our greatest cities, the smaller cities, towns and rural districts have also been hearing the message of community health and have been searching for ways and means of establishing better standards of living in their midst. They could not, however, secure funds, either public or private, for many nurses, so they have been obliged to seek one or more who could and would serve the community in a general way; and with a surprising degree of success a great many women have fulfilled this mission.

At the same time a growing consciousness of overlapping, duplication and waste of effort and funds has become apparent in all places large or small where special workers have been employed. Moreover, the workers themselves and the public have realized ever more forcibly that each separate movement was but part of one big public health campaign and must constantly overreach its own specific bounds in order to do finished work within those bounds.

Hence, the following observations of approximately a decade's work will hardly be contradicted:

1. Overlapping of service with (a) confusion of workers and (b) unnecessary measure of dependence and even pauperization of beneficiaries.

2. Frequent failure to secure the desired, because of lack of entire harmony of plan and procedure among the workers.

3. Waste of funds due to extensive territory covered by specialized field workers and duplication of administrative machinery and attendant overhead charges.

Therefore, *one* means of overcoming these defects is to reduce the variety of workers by demanding for the larger communities, as well as the smaller, women adequately prepared to be general public health nurses. Instantly the question is heard, is this practically possible, either in point of numbers or of education?

In reply let it be said it is increasingly so:

1. Because this field of nursing is attracting a large number of educated women into the profession who formerly found no interest in it.

2. Because, presumptuous though it sounds, it has been found possible to crowd into one academic year of eight months a reasonably satisfactory theoretical foundation for this work and a thorough preparation in one and a half to two academic years, the content of which provides the subject for another paper.

3. Because it is altogether probable that the experiment now being worked out in Bellevue Training School and the School of Philanthropy in New York City (which offers a course of two years in the Training School and one year in the School of Philanthropy, leading to the diplomas of both) will eventually be so modified in some other carefully selected schools as to furnish just the courses needed to meet the particular requirements of general public health nurses. (Let it be distinctly understood in this connection, however, that this most recent departure from the established traditions of nursing education is attended with very *real* dangers, which it is not within the province of this paper to discuss.) It may thereby be made possible to prepare women for this work in the same length of time that is now spent by nurse students in all first class schools of nursing where three calendar years are now given to technical training.

4. Several universities, colleges and technical schools are already offering courses especially designed for nurses and will assuredly give more when the demand warrants.

Therefore, it seems safe to say that when the public demands the general public health nurse, the schools and colleges will furnish the requisite education; and the combined incentives of opportunity for public health service and available academic studies will attract a sufficient number of intelligent, high-minded women to meet that demand.

Moreover, granting that this splendid new work of health protection and education, great with possibilities for the nation at large, can never be extended to all the people including our vast rural population until the worker is made financially possible, how can her services be most speedily and extensively secured?

Experiments and demonstrations in all of the specializations have been and are still being made by private philanthropies; but, when proven to be a community obligation, they should be—and more and more generally are being—squarely placed on the shoulders of the community, to be borne at public expense, as has been so clearly set forth by Sidney Webb in his article called "The Extension Ladder." Better still will this great cause be served when the States write into their health codes clauses providing for public health nursing service, as New York State has recently done, thereby insuring uniform standards of control. Then will be possible

the lowest terms of cost consistent with high standards of work—and this combined standard of efficiency and economy will be best served through the services of a general public health nurse, who is conscious of being only a part, although an indispensable part, of the health program of her community.

Quoting from an article by Dr. J. N. Force, entitled "A Health Town"—

"In these days the voice of the people is growing louder, and with ever increasing education, the voice speaks in a more positive tone. Once the voice was hushed before the manifestation of great plagues; now the voice asks reasons. The social conscience of the people will speak to the individual who is loudly demanding freedom and say, 'You are free only as long as you do not interfere with all of us; if you live in the pack, you must abide by the pack-made laws, which are made by all of us.' The social conscience whispers to the person who is opposed to medical inspection of schools: 'You are stealing the time of all of us, if your near-sighted child has to repeat a grade. Your child is our child in our schools. You have no right to hold it back at our expense, because you do not believe in glasses.'

"The social conscience speaks to the school teacher: 'We are going to demand that you teachers learn the early signs of measles. Your ignorance plus the ignorance or disbelief of parents regarding disease, is too expensive for all of us to bear. You are one of the favored class. From those to whom much is given much is expected.'

"The social conscience says to the mother: 'Yes I know that it is your child, but after a while, your child will be our citizen, and we want him to take his proper place and bear his share of the load. There is load enough for strong men, and we need no more weak ones. Therefore, we are going to send a wise woman to talk to you. We call her a health visitor. She is our representative. Listen to her.'

"The social conscience speaks gently to the busy family physician: 'Don't you think if you saw fewer patients and made more careful diagnoses in the cases you do see, and read up modern treatment and took a postgraduate course once in a while, that you would do more good in the world?' And the honest physician answers and says: 'Oh, voice of the people! I know, I know, but good diagnosis costs, and proper hospital treatment costs, and expert consultations cost. All of these things are for the rich, for they have money, and for the poor, for they receive charity; but how can the wage earner afford these things?'

"And the social conscience will speak again to the physician and say: 'As you labor for all of us, so will we care for you. But the life of the citizen does not stand in danger in our court of law because of lack of counsel; should it stand in danger in the sick room because of lack of consultation?' If a citizen is entitled to schooling at the expense of the state,

in order that he may bear his share of the common load, is he not entitled to an equal measure of health protection?

"There is no more heartbreaking thing in preventive medicine than the problem of the tuberculous family, and it will never be solved without the help of the social conscience. Here is a man clinging to his work to provide the means of life for his young children, while at the same time he is sowing in them the seeds of death. Some day the social conscience will say to that man: 'You and your family must go to a camp colony. We can guard your children better there. We have provided an out-of-door school, and after you have rested a year you can work a little for all of us.'

"The social conscience has spoken in Austria, Germany and England, and in those countries you can buy insurance against sickness, old age, accident or loss of employment. . . . The voice of the people one day will demand the absolute socialization of medicine."

In closing, may it be permissible to add that not only will the voice of the people one day demand the absolute socialization of medicine, but of nursing as well. No inconsiderable amount of thought is being directed toward the possibility of some form of sickness insurance with nursing care, which may be acceptable and available to all people, as the first decisive step toward the final goal of free public health.

THE FEDERAL MEAT INSPECTION SERVICE AND SANITATION OF PACKING HOUSES UNDER ITS SUPERVISION.

GEORGE H. SHAW,

Sanitary Engineer, Bureau of Animal Industry, U. S. Department of Agriculture.

Read before the General Sessions, American Public Health Association, Jacksonville, Fla., December 1, 1914.

With the increase in urban population and the growth of specialization in the various industries, have come new problems. Not the least important of these is the problem of properly protecting and safeguarding the meat supply of the country. In the early days before the present concentration of the packing house industry in a few large centers, the individual usually raised and slaughtered the meat for his family and was thus independent of outside sources, but with modern business methods he has become dependent for his supply on the large packing house centers, and must, therefore, rely upon Government, State or Municipal inspection to determine whether the meats prepared at these centers are wholesome and fit for human food. It is the purpose of this paper to describe briefly that part of the work of inspection performed by the Federal Government, as well as the sanitary conditions in the packing houses which prepare meat food products under Government supervision.

The first meat-inspection laws passed by Congress were not sufficiently broad to give the Department of Agriculture adequate control over the interstate meat industry. The original law, that of August, 1890, provided only for the inspection of meats for export. This was followed by the law of March, 1891, which provided for the inspection of live cattle, hogs, and the carcasses and products thereof, but gave no control over the sanitary conditions in packing houses or authority to prevent the transportation from one State or Territory to another or to any foreign countries of condemned carcasses or parts of carcasses. The amendment of 1895, although it corrected this latter deficiency, failed to provide other needed legislation. It will be seen, therefore, that the Department of Agriculture had but limited supervision over the meat industry during the period previous to the passage of the law of 1906, and was without authority to make regulations that were considered necessary.

The Meat Inspection Law of June 30, 1906, now in force, corrected many of the deficiencies of previous laws. This enactment was largely brought about by the agitation of 1906, which directed public attention to the inadequacy of existing meat inspection legislation. The criticisms, given

considerable publicity at that time, related almost wholly to canned and prepared meats, the use of preservatives and the insanitary conditions in packing houses. Previous to this agitation several unsuccessful efforts had been made by the Secretary of Agriculture and the Chief of the Bureau of Animal Industry to procure the enactment of new legislation and an increased appropriation to extend the inspection work and improve its efficiency, but at the time of these disclosures the Department did not have control over the matters under criticism.

The present law, passed June 30, 1906, provides a permanent annual appropriation of $3,000,000 and gives the Secretary authority to make the necessary regulations to govern the various packing house operations and to prescribe the necessary sanitary regulations. In addition to the inspection of live and slaughtered animals provided for by the former law, it provides that meats and meat food products in all stages and processes of preparation, curing, canning, etc., shall be inspected, and prohibits the use of harmful chemicals and preservatives and misleading labels. This law, therefore, gave the Department the power to regulate the interstate meat industry and during the eight years since its passage it has been found to meet conditions much more satisfactorily than did previous laws.

The enforcement of this law is one of the functions of the Bureau of Animal Industry of the Department of Agriculture. At the present time meat inspection is conducted in over 800 establishments in 232 cities and towns, and a small army of veterinary inspectors and lay inspectors, numbering about 2,400, is required to carry on the work. At many of the local subdivisions or stations but few men are required, but at the largest station the meat inspection force under the supervision of the local inspector in charge includes over 400 men.

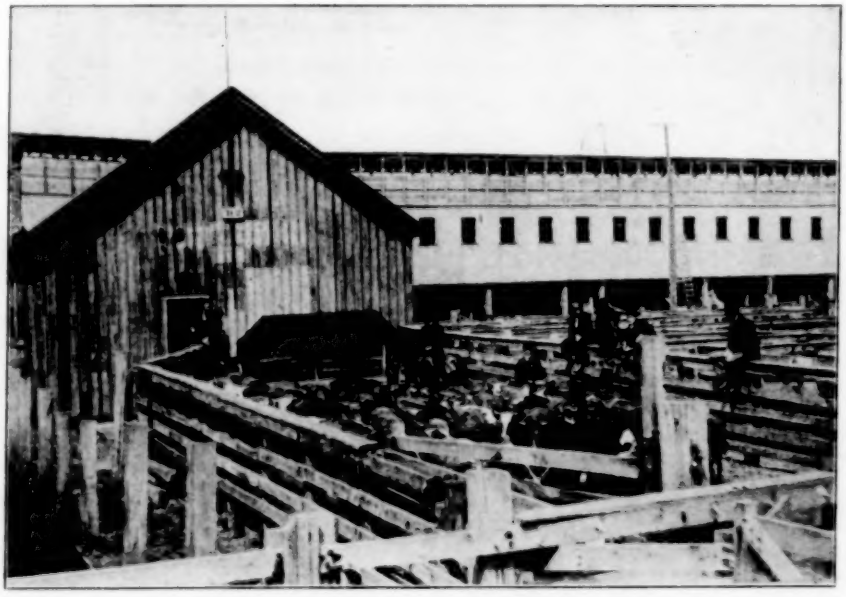
It is evident that some form of traveling supervision is necessary to maintain uniformity and efficiency at the numerous widely separated stations. This important service is performed by traveling veterinary inspectors who make unannounced periodic visits and thoroughly review the work at the station. An architect and a sanitary engineer are also attached to the inspection staff. Their duties are to make investigations and submit reports when conditions arise that require special knowledge along architectural and sanitary engineering lines.

The inspection of food animals, as conducted by the force of Government inspectors just described, may be divided into three parts: *First*, a careful antemortem examination in the stock yards or at the establishment; *Second*, a thorough postmortem examination while the carcass is being dressed; and, *Third*, a reinspection and supervision of cured and canned meats.

The antemortem inspector examines the animals offered for slaughter to detect certain diseases and conditions, such as acute hog cholera, im-

maturity and acute febrile diseases, in which symptoms are pronounced on antemortem examination but often slight or not present on postmortem examination. When he observes an animal showing symptoms or suspected of being affected with any disease or condition which would probably cause its condemnation in whole or in part when slaughtered, he affixes a numbered metal tag to its ear bearing the words, "U. S. Suspect." Such animals are slaughtered separately.

The postmortem inspection is performed by graduate veterinarians who become very skilful in rapidly detecting diseased and abnormal conditions. Upon this inspection is placed the main reliance for determining whether the meat is fit for human food, for animals are frequently found that ap-



No. 1. Antemortem Inspection of Cattle.

pear to be perfectly healthy and in good condition on antemortem inspection, but upon slaughtering the postmortem inspection may reveal generalized tuberculosis and other diseased conditions. To detect any obscure signs of disease, the inspector palpitates and lays open with a knife the various parts and upon finding any such condition he affixes an official numbered tag and retains the carcass for final examination. The final examination of a carcass to determine whether it shall be condemned or otherwise disposed of is made by the veterinary inspector in the "Final" room, where there is ample time for a thorough examination.

The supervision of the curing and canning, and the reinspection of meats is generally performed by "lay" inspectors. These men are specially trained in the preservation and processing of meat food products. Their duties are to see that the meats have not spoiled or become otherwise unwholesome since inspection at the time of slaughter, and to guard against adulteration, the use of harmful chemicals or preservatives, and dishonest labeling, as well as insanitary methods of canning and processing.

With this brief outline of the method of conducting inspection, it may be of interest to summarize its results and indicate the magnitude of the work performed by the Meat Inspection Service.

No. 2. Final Examination of Retained Carcasses.

Statistics covering the past eight years, during which meat inspection has been in effect, show that over 434 million animals have been slaughtered. Of these, over one and one third million whole carcasses and over five and one half million parts of carcasses have been condemned as unfit for food. Inspection or reinspection was made of over 40 billion pounds of meat and meat food products, of which over 179 million pounds were condemned.

The economist will doubtless deplore the loss for food purposes of such a large quantity of meat, while, on the other hand, the Department has been publicly criticized for not condemning all carcasses and parts of

carcasses found even slightly diseased. To obtain the best scientific knowledge available as to the right point to draw the line, Secretary Wilson, in 1907 appointed a committee of the foremost pathologists and hygienists to study and report on the meat inspection regulations as drawn up by the Department. These eminent scientists endorsed many of the regulations without comment and outlined certain rules for the disposition of meats, which have since been adopted.

Until recently no provision was made for a second grade product from animals affected locally and only slightly diseased, as is common in Europe. The new regulations which went into effect in November, 1914, however, permit the use of the wholesome portions of such meat when thoroughly sterilized and properly labeled. This provision is expected to add considerably to the amount of meat available for food purposes.

The imperative need of meat inspection has been recognized by most foreign countries and is shown by experiments regarding the danger to man from the consumption of meat from tuberculous animals and by the poisoning resulting from eating meat that is diseased. An exhibit of specimens of diseased organs and parts of carcasses that are daily condemned by Government veterinary inspectors can not but interest the layman and impress him with the value of the work.

Government inspection of meat is then a public necessity and has three important functions.

First: To protect the consumer from tainted and diseased meats.

Second: To insure proper sanitary conditions and cleanly conduct of operations.

Third: To prevent adulteration and fraudulent labeling.

That the Service is performing these functions effectively and deserves the confidence of the public is evidenced by the report of Prof. Wm. T. Sedgwick, who was appointed by Secretary Houston in 1913 to investigate the Federal meat inspection service in the States of Massachusetts and Connecticut. The following quotation is taken from the final sentences of his report:

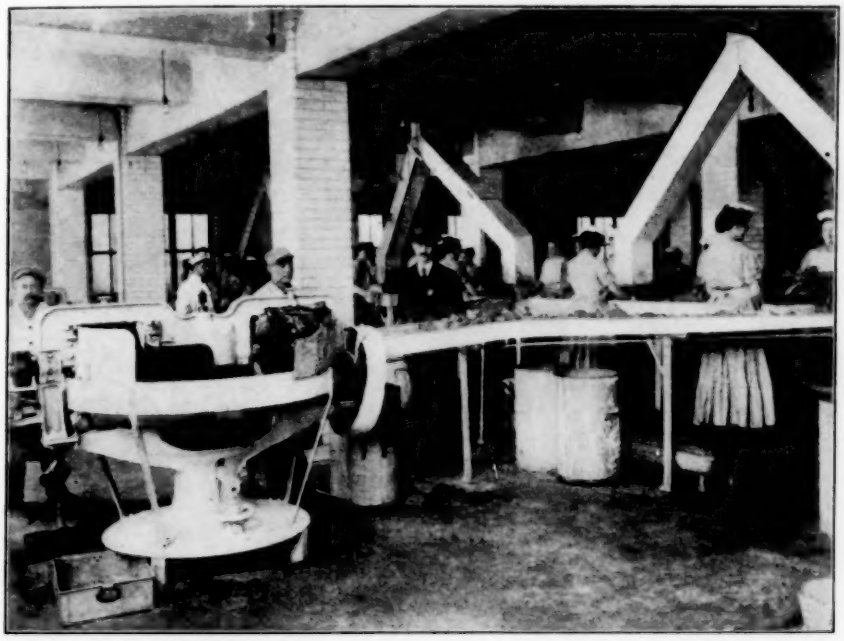
"In conclusion I may say that, cut short by illness as my investigation of the meat inspection service has been, I am, nevertheless, deeply impressed with its excellence, its usefulness and its efficiency. It is everywhere admitted, I think, that the United States meat inspection is far superior to any provided by the States and that these constantly look to it as a model toward which they are striving."

We may now pass from a consideration of the actual work of inspection and of the personnel of the force that conducts it, to a survey of the sanitary conditions under which meats are prepared in Government inspected packing houses.

Some of the conditions that obtained previous to the passage of the

present law are described by Mr. Chas. P. Neill and Mr. James B. Reynolds, in their report to President Roosevelt in 1906. They found a general lack of cleanliness in the handling of meats and products, poor ventilation and lighting, inadequate toilet conveniences and other sanitary defects. This report was an important factor in bringing about legislation which has made it possible to correct these conditions.

Regulation No. 8 of Bureau of Animal Industry Order 211, entitled "Regulations Governing the Meat Inspection of the United States Depart-



No. 3. Canning of Corned Beef, Showing Sanitary Building Construction and Equipment.

ment of Agriculture," contains the sanitary regulations which the law authorized the Secretary of Agriculture to prescribe. They are designed to be broad in their application and include, among other things, provisions for a pure water supply, abundant light and ventilation, efficient drainage, proper structural conditions, exclusion of odors from edible products departments, adequate sanitary conveniences, sanitary equipment and the cleanly conduct of operations. Any failure of the establishment to meet the regulations is reported upon weekly by the under inspectors to the inspector in charge, who transmits a monthly sanitary report to Washington.

Space permits only of consideration of the phases of packing house

sanitation which are of special interest to the sanitary engineer, viz.; water supply, drainage equipment and disposal of wastes, control of odors and structural conditions.

The water supply of many packing houses is obtained from driven wells, while at others the public mains furnish the supply. Unfortunately, in some localities the only water supply available is not considered safe for use on edible products. This presents a serious difficulty, but it has usually been found possible to sterilize such water by heating with exhaust steam which is generally easily obtainable. The Bureau maintains a laboratory for water analysis at Washington, where samples from the various establishments are examined as the occasion demands. In suspicious cases these examinations are supplemented by investigations and reports by the Sanitary Engineer.

The regulations specify that the water supply shall be ample, clean and potable, with adequate facilities for its distribution through the plant, and that the establishment, whenever required, shall afford opportunity for the inspection of its water supply.

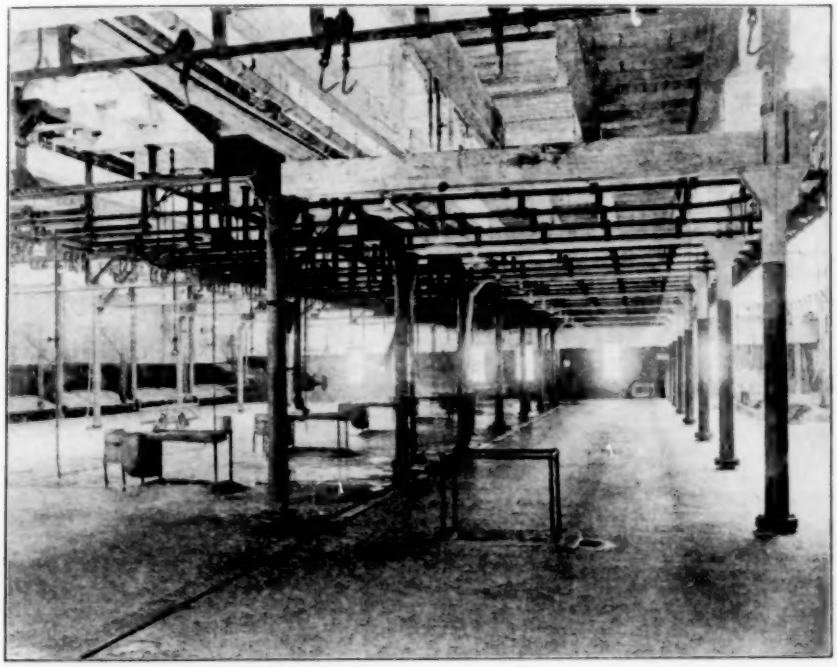
The drainage equipment of packing houses and the disposal of their wastes is a special application of the art of sewerage and sewage disposal. Large amounts of liquids, including blood, must be satisfactorily handled, and waste materials, such as paunch contents, manure from stock yards and fertilizer by-products, must be disposed of without undue nuisance.

Floor liquids are usually conducted to the main drainage pipe or "stack" by means of open floor gutters provided with removable cover boards. This method of drainage prevents clogging and is adapted to thorough cleansing. The gutters are connected to the "stacks" through suitable traps which exclude odors and steam from operating rooms. These vertical drainage pipes or "stacks" must be continuous from the top of the building to the basement, and not of the "interrupted" type, terminating at each floor, which was common in the old packing houses.

The usual methods of disposal of packing house drainage are by dilution, and by discharge into the city sewers, but some disposal works have been constructed. They have generally proven unsatisfactory, due to the very refractory material that must be dealt with and the lack of attention usually given them. The special investigations being made at Bubbly Creek by the Sanitary District of Chicago, will doubtless add greatly to our knowledge concerning the best methods of disposal of packing house sewage.

The control of objectionable odors from industrial plants is occupying more attention than formerly. In the past, rendering works and packing houses have been the chief offenders. Numerous suits have been entered against their owners and they have been forced to seek a remedy for the objectionable conditions. Within the past year plants have been completed

which give promise of operating without becoming a nuisance to the community. Fertilizer driers are, perhaps, the chief source of bad odors and at the plants mentioned gases from these driers are disposed of by passing through water and by combustion under the boiler grate. A large central shaft is also provided so that air from the various floors may be drawn into it by powerful fans. This central shaft leads to a large condensing chamber on the roof, containing numerous jets of water where the foul air is



No. 4. Beef Killing Department, Showing Lighting Conditions, Floor Drainage System and Equipment.

purified and is then allowed to escape. In addition to this equipment, a flue is provided to conduct the non-condensible gases from the condensation chamber to the boiler grate in case passage through this chamber does not sufficiently destroy the objectionable odors.

The Bureau regulations regarding odors relate only to conditions within the packing house. They require that rooms and compartments in which meat or products are prepared or handled shall be free from odors from dressing and toilet rooms, catch basins, hide cellars, casing rooms, inedible tank and fertilizer rooms and stables.

Many millions of dollars have been spent to improve structural conditions in Government-inspected packing houses in the eight years since the passage of the Meat Inspection Law. At the outset much reconstruction was necessary to meet government requirements and permit the inauguration of meat inspection. Many of the packing houses thus made temporarily acceptable have since been torn down and replaced with modern structures.

The packing house of ten years ago was generally constructed of wood and little attention was given to lighting, ventilation or sanitation in general. The life of such structures was very short, due largely to the great quantity of water used in the various departments and the heavy trucking over the floors.

The modern packing house is an evolution from this type of building. The wooden structure has been replaced by fireproof construction of reinforced concrete and every means is provided to make cleanliness easy rather than difficult. These include impervious floors sloping to gutters, permitting free drainage, and smooth walls of cement or white tile brick. Cleanliness of the workman is also well provided for by laundries for washing his clothing and by modern toilet and dressing rooms equipped with shower baths and hot and cold running water.

If the present rate of progress continues, this modern type of packing house will soon take the place of the comparatively few structures remaining in which sanitary conditions are maintained only at large expense to the owner and constant vigilance on the part of the government inspectors.

In conclusion, special attention is directed to the need of supplementing Federal meat inspection with efficient State and Municipal inspection, for this is a matter that merits immediate and concerted action by health officers and all concerned in promoting conditions that make for the public health.

The insanitary, uninspected slaughter house exists today, in spite of the efforts of the Department and public-spirited persons, to bring about reform. Many have doubtless sought the reason for the anomaly of an uninspected, insanitary slaughter house in close proximity to one where government inspection and sanitary conditions are maintained. It is to be found in the interstate and foreign clause of the Constitution, which limits Federal regulation to establishments engaged in interstate and foreign commerce. Establishments, therefore, the meats from which are slaughtered, prepared and consumed entirely within a single State, are beyond the jurisdiction of the Federal Government.

It is estimated that 60 per cent. of the meat supply of the country is Federally inspected. Of the remaining 40 per cent., a portion receives more or less efficient local inspection, while the rest is without any form of inspection. This uninspected portion is often prepared under most

unsavory conditions, and, furthermore, an abnormally high percentage of diseased animals may be expected, since tuberculous dairy cows and suspicious looking animals are often sent to such establishments to avoid condemnation by Federal inspectors.

The remedy is to be found in efficient State and Municipal inspection and the development of the Municipal Abattoir system common in Europe. An abattoir of this kind will eliminate the nuisance caused by several scattered, ill-smelling and insanitary slaughter houses, will enable inspection to be conducted at a minimum of cost and will make possible the utilization of by-products now usually wasted. The Bureau of Animal Industry is prepared to furnish plans and specifications for such central abattoirs and will gladly coöperate and give any possible information or advice with regard to establishing local inspection.

Already efficient meat inspection systems have been established in various parts of the country and there is promise that soon the States and Municipalities without adequate local inspection will take the necessary steps to effectively supplement the work of the Federal Meat Inspection Service.

LIST OF PUBLICATIONS OF THE DEPARTMENT OF AGRICULTURE RELATING TO THE SUBJECT MATTER OF THIS PAPER.

(Those indicated by an asterisk can be obtained by applying to the Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C.)

*The Federal Meat Inspection Service, by Dr. A. D. Melvin, Chief, Bureau of Animal Industry.

*State and Municipal Meat Inspection and Municipal Slaughter-Houses, by Dr. A. D. Melvin, Chief, Bureau of Animal Industry.

Report of a Commission on Certain Features of the Federal Meat Inspection Regulations.

*Regulations Governing the Meat Inspection of the United States Department of Agriculture, Bureau of Animal Industry Order 211.

*The Sanitary Construction and Equipment of Abattoirs and Packing Houses, by G. H. Parks, Architect, Bureau of Animal Industry.

A MODIFICATION OF PONDER'S STAIN FOR DIPHTHERIA.

J. J. KINYOUN, M. D., PH. D.,

Bacteriologist, Health Department, Washington, D. C.

Read before the Laboratory Section, American Public Health Association, Jacksonville, Fla., November 30–December 4, 1914.

Ponder* has described a stain for the diphtheria bacilli which consists of a weak solution of Toluidin Blue.

His method is to examine a smear or culture, from a suspected case of diphtheria in the form of a hanging drop. A smear is made on a coverglass, then a loop of the stain applied and then inverting the specimen over a cell slide, and examined as a hanging drop. The granules of the diphtheria rod stand out sharply, the limiting membrane is unstained—while other bacilli are stained faintly if at all. Cultures of diphtheria give a striking picture and particularly is this so when artificial light is employed. When viewed by artificial light the granules are of a dark ruby red, and there is a faint suggestion of the outlines of a rod—just a shadow—sometimes the granules only.

Ponder seems to think that this stain employed in this manner, brings out the characteristics of the diphtheria bacillus quite as good if not better than the Neisser stain.

Neisser stain when it is standardized for a given culture gives most beautiful and perfect pictures of the granules and rod. Oftentimes, however, the stock solution does not act in this manner, and we have to modify it to suit the particular culture.

The chief objection which I have found to Ponder's stain is that staphylococci, diplococci, and streptococci are sometimes stained, in a manner as to resemble the granules in the diphtheria rod, and may be difficult to determine in some instances whether they are one thing or another. Now if the rod was defined no such condition could arise.

Another drawback to the application of this stain is the element of time required to prepare and examine each hanging drop preparation. When only a few are to be examined this will not matter so much but where a large number are to be examined it is a great consumer of time.

I have modified the stain in a few particulars so that it will stain the rods and at the same time not interfere with the granules. Further, this stain can be employed just in the same way as Loeffler's or other laboratory stains.

*Lancet, July 6, 1912.

The formula proposed is:

Toluidin Blue	0.1 gram
Azue 1	.01 gram
Methylene Blue	.01 gram
Acetic acid (glac)	1 cc.
Alcohol, 95 per cent.	5 cc.
Water	120 cc.

Preparations (smears or cultures) are made in the usual manner, fixed with heat, allowed to cool, and stained 2 minutes or more—it does not overstain even to 7 minutes.

The diphtheria bacilli stand out prominently from all others, the granules are clear, sharp and of a dark red, while the rod is stained a pale blue. Other bacilli are stained pale, and evenly throughout staphylococci, and diplococci sometimes resemble the granules, but have nothing stained between them.

It is of great value in the release cultures, where the bacilli are few. Little or no difficulty is had in identifying these, quite a contrast, to those stained with Loeffler's Blue.

It is of great value in excluding Hoffman's bacillus. This bacillus, so far as my observation goes, does not show any granules, whereas in diphtheria cultures we have found the granules even in the barred type.

I have now been using this modification of Ponder's stain for the routine examinations and find it superior by far to any stain that has been proposed.

REPORT ON THE HEALTH OF YORK, MAINE.

A brief review of the situation at York in regard to public health is not amiss at the opening of the new year. In the late summer and early autumn of the past year there were a number of cases of typhoid fever in York Harbor and the vicinity. While these cases were not enough in number and severity to constitute a serious epidemic, the mere presence of the disease in such a popular seaside resort naturally gives rise to considerable alarm. York met the situation in the following way, which should serve as a model to any other town in similar circumstances. There was no attempt to conceal the fact of the existence of the disease and its extent, the authorities very properly feeling that the way to meet any danger was to face it in the open.

At a meeting of the Village Improvement Society, a committee was appointed to confer with the Selectmen and the Board of Health. As the result of this conference, a town meeting was held late in September and money was voted to meet the cost of a sanitary survey of the town which was made by Professor Milton J. Rosenau of Harvard University. While nothing very startling was discovered, a situation was found which showed that there were conditions which might and probably did affect the public health. As a result of the report of Professor Rosenau, a town meeting was held at which it was voted to employ a health officer, and $2500 was voted for his salary and the expense incidental to the work.

The town is to be congratulated upon the selection of Mr. William Eustis Brown as its health officer. Mr. Brown has had a thorough training in sanitation and preventive medicine both at the Massachusetts Institute of Technology and at Harvard University. He is a graduate of the School for Health Officers and has had varied and wide experience in sanitary work of all kinds, and is well qualified to carry on the work.

This step which York has taken at once places it in the fore-front of progress as far as health is concerned. York has determined to safeguard its citizens and all strangers within its gates and give them the security of health that a well-ordered sanitary department can furnish. Although blest with natural advantages of an unusual order, an admirable location, a charming scenery both of sea and country, and a delightful climate, York is not going to depend upon nature and luck for a clean bill of health. It has been said that "public health is purchasable," the price is moderate and the action of York shows that she intends to enjoy the best attainable protection from disease. Such protection ranks far above any other advantages which a summer resort can enjoy. Many resorts have acted on the policy that a good climate, charm of location and beauty of scenery are sufficient inducements to attract the summer visitor; but nowadays people are more wary and wisely look for more than this before selecting a vacation playground. The visitor wants a clean bill of health for the resort he has chosen and is entitled to have one. York will now be able to furnish this assurance.

There may be some obscurity as to the duties of a health officer in a small town such as York. Cases of communicable disease may arise in any community. Typhoid fever lurks in almost every country district in the land, always ready to strike if the opportunity offers. Some of the 8,000 people from various parts of our broad land who visit York annually may introduce infection. It will be one of the duties of the new health officer to ascertain the existence of infectious diseases and take immediate measures to prevent their spread. Cases of such diseases will be traced to their source and practical preventive measures will be applied without delay.

Furthermore, the health officer will examine the sources of water supplies and analyze them. He will inspect the milk supply, visit and examine dairies, see that cows are healthy, that the milk is gathered in a cleanly and safe manner. This is of great importance as disease is often spread through contaminated milk. A little advice as to dairy management is often of great advantage to the milk producer.

Other foods, such as oysters, clams, meat, lettuce, etc., will be inspected by the health officer in order to be sure that the dealers comply with the pure food laws. The health officer will also inspect markets, kitchens, provision shops and storerooms where food is handled and kept. He looks after nuisances, prevents pollution of the beaches, conducts a campaign against flies and mosquitoes, supervises the harvesting of ice and performs many other duties which are included in the art of hygienic living. He keeps the vital statistics in accordance with modern methods. With careful records he is able to compare the health of York with other communities and to determine whether the measures he is taking are effective; and to trace the progress of health and disease, of births and marriages, and other vital factors affecting every member of the community.

York must some time in the not distant future look forward to the installation of a sewage system. This work must not be undertaken hastily, and information must be collected which will be of service in providing a proper system. To collect such information and to study the local conditions will be a part of the duties of the health officer.

In connection with the position, a chemical and bacteriological laboratory will be equipped where analyses may be made. This laboratory also will be prepared to make blood tests in order to early recognize cases of typhoid fever, to examine throat cultures in order to diagnose diphtheria, and to generally assist the physicians in the early recognition of other infections and to ascertain the time when such cases may be released from quarantine so that they will not menace the community as bacillus carriers.

We may all feel more secure in the health of our families and particularly of our children now that such a work has been undertaken.

JOSEPH P. BRAGDON,
Chairman of Board of Selectmen.
WILLIE W. CUZNER,
Secretary of Board of Health.
W. T. COUNCILMAN,
Chairman of Committee of Village Improvement Society.

THIRD PROGRESS REPORT OF THE COMMITTEE ON STANDARD METHODS FOR THE EXAMINATION OF AIR.

Read before the Joint Session of Laboratory and Sanitary Engineering Sections, American Public Health Association, Jacksonville, Fla., November 30–December 4, 1914.

The Committee on Standard Methods for the Examination of Air made its first report in 1909 (published in the *American Journal of Public Hygiene*, XX, 346) and presented a second Progress Report at the Washington meeting in 1912 (published in the AMERICAN JOURNAL OF PUBLIC HEALTH, III, 78). The field of work which falls to the Committee is a large one and it has not yet been possible to arrive at definite conclusions in regard to the best procedures for certain specific purposes. By 1916 it is hoped that a fairly complete report can be rendered and the Committee discharged. At the present time the Committee deems it best, in accordance with its previous policy, to present a report of progress setting forth the advances made during the past two years and the present status of the various subjects under consideration.

The principal determinations which have occupied the attention of the Committee are five in number.

(1) Temperature and Humidity,
(2) Dust,
(3) Carbon Dioxide,
(4) Bacteria,
(5) Poisonous Gases and Metals.

The methods for the first, third and fourth of these determinations are now well standardized and reasonably satisfactory. The second and fifth require further study.

(1) *Temperature and Humidity.*—The standard methods recommended in 1909 for the measurement of temperature and humidity—the recording thermometer and the United States Weather Bureau Sling Psychrometer—continue to prove entirely satisfactory for practical purposes.

Two new types of psychrometer have recently been suggested, both of which seem of value for special purposes.

The first is a small portable psychrometer suggested by Howe (AMERICAN JOURNAL OF PUBLIC HEALTH, III, 784) for use in street cars and other confined spaces. In this device the wet bulb is dipped in Japan Gold Size covered with leaf gold or copper foil and then coated with platinum black. A current of air is produced by means either of a small electric fan or of a cautery bulb and the coated wet bulb is said to respond with great rapidity and accuracy.

Another important advance in psychrometry is the Recording Psychrometer made by the Bristol Company, in which the expansion of an inert gas in wet and dry bulbs is transmitted through tubes to a recording clock dial of the usual type. This apparatus has been used for nearly a year in experiments carried out under the observation of Professors Phelps and Winslow of your Committee by the New York State Commission on Ventilation and has proved itself entirely satisfactory.

(2) *Dust.*—In its 1912 report, the Committee particularly mentioned two procedures for dust determination, the ordinary sugar filtration method, and a method in which the dust particles are collected by directing a current of air against a glycerinated plate.

Two objections have developed to the sugar filtration method, the inaccuracies due to dust present in the sugar and the small and therefore somewhat unrepresentative samples which can be dealt with. In order to avoid the errors due to dust in the filtering medium the use of resorcinol instead of sugar has been suggested. This medium has been tested out by several members of the Committee and proved superior to ordinary brands of sugar. A particular brand of sugar sold under the name of Crystal Domino Granulated was finally found which is practically free from dust, being superior even to resorcinol.

The sugar filtration method as described in the previous reports of the Committee, and with the specification of clean sugar as a filtering medium, seems on the whole satisfactory for the study of the rather minute but not sub-microscopic particles which occur to the number of some 100,000 to 500,000 particles per cubic foot in ordinary indoor and outdoor city air. These particles Professor Whipple and Mr. M. C. Whipple (American Journal of Public Health, III, 1138) find to average about 3 microns in diameter and to range from .5 to 15 microns. Professor Whipple has used this method extensively and has brought out some very interesting local differences in dust content by its use. Thus samples taken at the various stories of the Woolworth Building in New York showed a progressive decrease in dust count from 221,000 dust particles per cubic foot at the street level to 27,300 particles at the fifty-seventh story. The numbers found in indoor air are higher. Professor Whipple found that the air of the Y. M. C. A. College Gymnasium at Springfield, Mass., contained usually more than 100,000 particles per cubic foot and sometimes 400,000. Professors Baskerville and Winslow in the study of 658 samples of New York City schoolroom air found numbers ranging as a rule between 200,000 and 400,000 particles per cubic foot, a few high samples raising the average to 600,000 (American Journal of Public Health, III, 1158).

In the study of the air of a dusty office building in New York City, Professor Winslow found an average of 485,000 particles per cubic foot in fifteen samples collected while dry dusting was not going on, while nineteen

samples collected during the process of dusting gave an average of 694,000 particles.

Professor Whipple (*l. c.*) has applied this method of dust counting to the study of the efficiency of commercial air washers with the result that a number of types tested removed an average of only 54 per cent. of the dust particles in the incoming air.

Altogether it may be concluded that the sugar filtration method is a very satisfactory procedure for the study of the small dust particles (3 microns and thereabouts) which are present in almost all air to the number of 10,000 and more per cubic foot. In the study of industrial dusts which are the dusts of vital importance from a sanitary standpoint, we are concerned with larger but less numerous particles. When two or three cubic feet of air only are filtered and the dust filtered out is suspended in a Sedgwick-Rafter cell and counted, these less numerous but large and dangerous particles are apt to be lost. Thus studies made for the New York State Commission on Ventilation by the sugar filtration method failed to show any material difference between the air of a hat factory and that of the city street.

What is needed for the industrial dusts is some method by which a larger volume of air may be examined. This end is accomplished by the method in which a current of air impinges on a glycerinated plate discussed in the 1912 Report of the Committee. Studies made during the past year for the New York State Commission on Ventilation have, however, shown considerable errors in this procedure, a material proportion of the dust being carried over and past the glycerinated plate without adhering to it. The Chicago Association of Commerce Committee on Smoke Abatement has obtained interesting results by filtering large volumes of air through a soxlet paper thimble filled with cotton and subsequently weighing the dust and examining it under the microscope, but the collection of a sample by this procedure occupies six hours.

An ingenious device for throwing dust particles out by centrifugal force in a rapidly revolving tube has been suggested by Mr. W. F. Wells of the United States Hygienic Laboratory and is now being tested out by members of the Committee.

It is the feeling of your Committee that the sugar filtration method is reasonably satisfactory for the study of the smaller and more numerous particles in air but that the question of the best procedure for enumerating the larger and less numerous particles produced by industrial processes requires further study.

(3) *Carbon Dioxide.*—The experience of the last two years tends to show that the modified Petterson-Palmquist apparatus recommended in the 1912 Report of the Committee is entirely satisfactory for all practical purposes. Under most conditions samples of air may most satisfactorily

be analyzed directly in the field by the use of this apparatus. Where this cannot be done, as in railway cars for example, the samples must be taken to the laboratory for analysis and under such circumstances the sampling methods recommended in the 1912 Report of the Committee have proved successful. The carbon dioxide question seems therefore to have been satisfactorily solved.

(4) *Bacteria.*—The method recommended by the Committee in 1909 with certain minor modifications suggested in 1912 has been extensively used during the last two years and has given excellent results.

Professors Baskerville and Winslow examined 684 samples of New York City schoolroom air by this procedure and the New York State Commission on Ventilation has examined 353 samples of air from both indoor and outdoor sources. The general results (from a paper by C.-E. A. Winslow and W. W. Browne published in the *Monthly Weather Review*, XLII, 452) are cited below:

AVERAGE MICROBIC CONTENT OF AIR FROM VARIOUS SOURCES.

Samples.		Microbes per cubic foot.		Streptococci per 100 cu. ft.
Source.	Number.	20° C.	37° C.	
Country	83	56	30	12
City	134	72	32	11
Offices	87	94	80	22
Factories	47	113	63	43
Schools	684	96	.....	30

It will be noted that a determination of mouth streptococci is included in this table. The estimation of these organisms as indices of buccal pollution was discussed in the 1909 Report of your Committee and dismissed as unnecessary. Recent studies have suggested that under special conditions it may be worth while to take them into consideration. Nolte (*Annals Missouri Botanical Garden*, I, 47) reports very high results (one salivary coccus in 10 cc., in 1,800 cc., in 1,950 cc., and in 3,600 cc. of air respectively) in crowded street cars where pollution from mouth spray is gross and immediate. When streptococci are to be isolated the simplest method would seem to be to pick characteristic colonies from litmus lactose agar plates made in the usual manner. The production of acid in lactose broth and the presence of spherical cells (not usually in long chains) are the only tests necessary for the identification of the common type of salivary streptococcus.

(5) *Poisonous Gases and Metals.*—In the 1912 report of your Committee

it was pointed out that the formulation of methods for estimating the poisonous substances found in the air of certain industrial establishments was an important task which fell properly within the scope of the committee work. Methods for determining carbon monoxide and wood alcohol suggested by Doctor Graham-Rogers were outlined in this report.

In addition to carbon monoxide and wood alcohol, your Committee believes that tests for sulphur dioxide, amyl alcohol, amyl acetate and perhaps other poisonous fumes should be standardized. For lead and zinc satisfactory methods are already available.

Your Committee plans to devote its attention to the problems of dust and of poisonous fumes during the next two years and hopes to make a final report on these and all other phases of the subject in 1916.

T. R. Crowder,
C. T. Graham-Rogers,
E. B. Phelps,
G. C. Whipple,
C.-E. A. Winslow,
Committee.

REPORT OF THE COMMITTEE ON STREET CLEANING, SANITARY ENGINEERING SECTION, AMERICAN PUBLIC HEALTH ASSOCIATION.

Read before the Section on Sanitary Engineering, American Public Health Association, Jacksonville, Fla., November 30–December 4, 1914.

Data relating to methods and costs of street cleaning, while not as complete and reliable as they should be, are available in considerable quantities, and are rapidly accumulating since more careful and systematic observation and account keeping are being introduced into our street-cleaning departments. We are, however, still much in the dark as to the actual effect of street refuse and dust upon the public health. This applies not only to such refuse while it lays on the streets, but to the sanitary effects of its collection, removal, handling, and final disposal. To those who are chiefly interested in matters relating to the public health, these aspects of the subject are obviously of primary importance, and they are, therefore, most appropriate for consideration by the American Public Health Association. While your Committee has not overlooked this fact, it has not been able satisfactorily to deal with this phase of the subject because of the meagerness of exact and reliable information relating thereto. Some scattered observations and facts are available but no systematic study of the subject has been made. Many opinions have been expressed and printed by physicians and sanitary authorities upon the deleterious effects of unclean streets, and upon the dangers that lurk in unsanitary handling and disposal of street dirt, but, as a rule, these opinions have not been based upon actual scientific investigation and observation, and while entitled to respect, they cannot be regarded as conclusive. They seem to be based largely upon the general theory that all dirt and waste is necessarily unsanitary, and that, therefore, street sweepings must be deleterious to the public health in whatever way it may exist or be present. Such inferences are warrantable upon general principles in the absence of definite evidence for or against them, but, at a time when hypotheses are little more than interesting until they are established by scientific investigation and observation, these conclusions cannot be accepted without challenge.

It would seem that we have reached a stage in this situation when such scientific investigation and observation are necessary in order to make further progress in this field of municipal sanitation, and your Committee feels that it probably can render no greater service at this time than to call attention to the conditions that exist, and to urge that those who are in

positions to do so should direct their efforts to a solution of the questions involved, and we, therefore, wish to outline briefly the work that seems necessary to be done. It is a field in which the coöperation of the physician, the sanitary engineer and the municipal government is necessary.

It has been generally held, and probably with sound reason, that street dirt as it exists on the streets, even temporarily, may be a source of zymotic disease. There can be no doubt that the germs of many contagious and infectious diseases reach our street surfaces and preserve their vitality for considerable periods; and that if introduced into the human system they may propagate themselves therein. We have no means of determining the quantities of such disease germs that thus reach the street surfaces and are intermingled with the street dirt, but a careful and systematic investigation might throw much light upon the subject, and might enable us to discuss intelligently the question whether the quantities thus found are sufficient to be a serious menace to the public health. It seems to be recognized that every human being takes into his system, from varying sources, disease-producing germs in greater or less numbers, but that, because of their minute quantities and the power of the human system to throw them off, the specific disease incident thereto may not result, except in cases of extreme debility or other predisposing conditions that furnish a fertile soil for their propagation and extensive growth. It is probable, for instance, that many municipal water supplies are not entirely free at all times from *B. typhosis*, but owing to the minuteness of the number present and their consequent great dilution in the water, typhoid fever may not result. If this be so, it may be possible that the quantity of disease germs in street sweepings is so small compared with the volume of sweepings and, therefore, so diluted, as to be practically negligible from a sanitary point of view. If this view is entertainable it becomes a very important question to determine the extent to which such disease germs exist in street dirt, both in normal and special conditions.

It is recognized that this may be a very difficult problem to solve. It would probably be next to impossible, in any case of disease, conclusively to establish the fact that the infection came from street dirt, but dependable evidence for or against the hypothesis might confidently be looked for in the relative prevalence of infectious diseases in classes of people especially exposed to opportunities for such infection. Thus, there are large numbers of men in all our cities engaged in patrol or hand street cleaning. They spend all their working hours on the streets, collecting and handling street dirt under conditions that peculiarly expose them to possible infection. Careful health records of these men as a class, continued over a sufficient period of time, should disclose with reasonable certainty whether they are more subject to the infectious diseases that might be expected to lurk in street dirt than laborers not thus directly exposed.

Again, if disease germs exist in street dirt, a careful bacteriological study of it on a sufficiently large scale and continued for a sufficient time should disclose to what extent the more easily recognizable, at least, of these germs are to be expected under normal or special conditions. Such an investigation to be of value would require a large amount of work and time, and would be attended with difficulties. The proverbial search for a needle in a haystack would doubtless be a comparatively easy task, but if we are to arrive at definite conclusions in this matter the work would seem to be of sufficient importance to warrant the labor and time required.

Since it is at least probable that these disease germs find their principal lodging place in the street dust, and that this dust is the principal vehicle of their dissemination, such bacteriological investigation might be confined to this material, which would make the work more simple and less laborious. Special care and thoroughness might be devoted to streets or sections of the city where any specific disease prevailed or was epidemic at the time.

What is said above applies quite as well to the sanitary dangers involved in collecting and transporting the street dirt from the street to the place of final disposal, though if it were found that the dirt on the street was not dangerous it might safely be inferred that no changes would take place in the short time occupied by these operations to make any infecting element more virile or dangerous. But here again careful health records of the men engaged in these operations would throw important light on the subject. In many cities a considerable number of men are constantly employed in the various operations of transferring street dirt from the collecting carts to barges, and in trimming the loads on the barges. Here they are dealing with the street dirt in large masses, collected from various sections of the city, the handling of which would seem to afford special facilities for the transfer of any disease germs to the bodies and lungs of the workmen, and we might expect that deleterious results would be more evident.

We have, so far, referred to zymotic diseases only; but danger is not confined wholly to these. During dry weather volumes of dust, raised by travel or by the wind, or both combined, float in the air from imperfectly cleaned streets. More or less of this dust is breathed into the lungs of those exposed to it, and even if it contains no disease germs, its presence in the lungs must be deleterious, as we know from investigations made in the case of dust in coal mines and other industrial operations. Even if it is not the immediate cause of sickness, it must tend to debilitate and make the human system more susceptible to the attacks of disease. This is probably also true of the exhalations arising from offensive matter, whether in a fresh or decaying condition.

In those cities where street sweepings are finally disposed of in large masses, in dumps, or for filling up low lands, the question whether such

masses, especially in the process of decomposition, are or are not deleterious to the health of those living near them, has been discussed pro and con very frequently. But here again opinions seem to be based almost entirely upon loosely formed conceptions or *a priori* reasoning, rather than upon actual evidence. The idea that zymotic diseases may be transmitted by the effluvia arising from these decaying masses is now largely discredited, but it seems not unreasonable to infer that the process of decay of large quantities of organic matter must make these great dumps unhealthful to those, at least, living near them. It ought to be possible to determine with reasonable certainty whether this be true or not. In not a few cities considerable areas of such filled lowland have been subdivided and built up as residence sections. Carefully kept medical records should furnish presumptive evidence as to their healthfulness compared with other portions of the community. We say *presumptive* evidence, because any distinct unhealthfulness found in such a locality might be due to other causes incident to the original condition of these low or swampy lands, and wholly independent of the material used for filling them. But there are doubtless not a few cases available for study where such ulterior insanitary conditions do not exist. For instance, the city of New York has for many years deposited city wastes, including street sweepings, on a small island in the East River, covering its original surface to a depth of from twenty to thirty feet with such waste, and extending the island far beyond its original limits into salt water. Not only have workmen been constantly employed on this island, but a penal colony was established there several years ago and the inmates live there constantly. A careful study of the health-conditions of these people before and while living there should supply valuable evidence upon the question whether, and in what measure, the conditions are unhealthful.

Municipal expenditures for the conservation of the health and physical well-being of the public should primarily be measured by the dangers to be guarded against, or the benefits to be expected therefrom. Such expenditures can be based intelligently only upon facts established by scientific methods. If street dirt is a serious menace to the public health we should know definitely the character and extent of the danger, and take adequate measures to afford the best possible protection. If, on the other hand, street cleaning is warranted mainly by aesthetic considerations and the public comfort, that fact should control the extent and character of the work.

Your Committee believes that the time has come when united efforts should be made to settle all these questions by adequate scientific investigation and observation and the legitimate conclusions warranted therefrom. It, therefore, very strongly recommends that health officers and executive heads of street-cleaning departments should institute a systematic and

thorough scheme of collecting and recording all the facts obtainable upon the following points:

1st. The relative prevalence of zymotic diseases among those constantly employed both upon the streets, as street cleaners, and those employed in the various operations of transporting and handling street wastes, as compared with the same classes of people engaged in other occupations, or as compared with the vital statistics of the city at large.

2d. The relative prevalence of diseases among those living in the vicinity of street refuse dumps, or upon ground filled in with such refuse.

3d. A careful, and sufficiently extensive bacteriological study of street dirt to determine the existence therein of disease germs, and the quantity of such germs in a unit quantity of street sweepings. We would further suggest that this would be an interesting and useful line of research for individual students in the field of sanitary exploration.

Your Committee would suggest that its successors should give special attention to the sanitary phases of the work assigned to it, and make a strong effort to collect and collate all the facts obtainable on the subject; and that, to this end, the street-cleaning and health authorities of all our cities be urgently requested to supply the Committee with all the facts relating thereto that may be in their possession, or that may be secured by such investigations as are herein outlined.

Respectfully submitted,

S. Whinery,
J. W. Paxton,
George H. Norton,
Charles O. Davis.

BOOK REVIEWS.

American Red Cross Text-Book on Elementary Hygiene and Home Care of the Sick. *By Jane A. DeLano, R. N., and Isabel McIsaac, R. N. P. Blakiston's Son & Co., Philadelphia. $1.00.*

It is unquestionably the simplicity of arrangement and presentation which gives special value to the "Text-Book on Elementary Hygiene and Home Care of the Sick" just issued under the endorsement of the American Red Cross Society.

Reduced to an inviting size, and stripped of inessential detail, this volume is plainly written for the use of the untrained nurse or the housewife, or possibly for school use, rather than for the elementary study of one who intends to become a professional nurse.

After two pages of definitions of scientific terms which might not be familiar to the average reader, the authors give in the first four lessons a lucid and concise review of the general conditions on which health depends —"Bacteria and their Relation to Health and Disease," "Causes and Transmission of Disease," "Food, Water, Ice," showing sources of contamination, and setting forth precautions which may be taken; and a lesson in "Air, Ventilation, Heating, Lighting, Soil, Sewage, and Garbage."

The authors then enter upon a more detailed treatment of the hygiene of the dwelling-house, making recommendations about the location and arrangement of the house, and the care of each of its departments. This is followed by a chapter on "Personal Hygiene," which shows a careful selection of the chief essentials and a well-arranged concise presentation. Its brevity and attractive topical arrangement will probably induce many busy people who have balked at a longer technical treatise on the subject to read this with interest. "The Hygiene of Infancy and Childhood" is treated in the same practical way, definite application being its chief characteristic.

The rest of the little volume is devoted to subjects concerned with sickness and home-nursing. There are two chapters on "Beds" and "Bed-Making," treated in much detail. Following these are miscellaneous chapters on "General Considerations of the Care of the Sick in their Own Homes," "General Care of a Patient," "The Use of Simple Sick-Room Appliances, Local Applications, and Enemata," "Symptoms of Disease," and "The Household Medicine Closet."

This book is well-arranged, simple in style, and easy to read. It should serve equally well as a general elementary text-book for schools, or as a practical volume for one who has the care and management of a household.

F. H. C.

Forty-Third Report of Social Government Board of England and Wales, 1913–1914.

It is interesting to note that these reports have continued practically for the same period as that during which the American Public Health Association has issued Annual Reports. The Report in its wide review of public health conditions may be looked upon as in many ways the most complete of any report coming to hand. It presents most complete tables, beginning with those of infant mortality. It is remarkable that in a country with 80 per cent. of urban population, the year 1912 gave a death-rate of children under one year as low as 114 per 1,000. This rate has been reached in twelve years since 1901 when it was 150; while for all ages under five the decline has been from 54 to 32 per 1,000. When it is further seen that of the total, 23.6 per cent. were deaths from premature births, etc., the decline may be considered as little short of marvellous.

A large chapter is devoted to "Maternity and Child Welfare," and discusses ante-natal, natal and post-natal conditions and the work *official* and *social* devoted to these three branches.

In a paragraph dealing with "Reduction

in the Birth-rate," a very interesting and important table is given of eight classes of the population.

Classes showing the percentage decline in births and the decline of infant mortality in 1912 compared with the average of each for the whole country in the period 1886–90.

	Per cent.	*Rates of infant mortality. Per cent.*
I. Upper and middle classes	27	32
II. Intermediate class	19	15
III. Skilled workmen	6	10
IV. Unskilled workers	2	3
V. Textile workers	31	22
VI. Textile workers	23	19
VII. Miners	42	28
VIII. Agricultural laborers	1	22

The table would have been yet more satisfactory had it given the percentage population of each group to the total population since it would have pointed to a most important sociological fact, viz., the bearing which the several classes have upon the growth of natural prosperity. While the percentage rate of the mortality decline in the upper classes is greater than the birth decline, yet the importance to the nation of its superior classes socially showing so great a decline in the birth-rate is of very serious consideration. If this be compared with the notable increase of births of unskilled workmen with a notably less relative decline of the death-rate we see a phenomenon of the greatest sociological import. While the remarkable increase in the birth-rate in the mining population is accompanied by a similarly less relative decline in the death-rate, yet that the latter should only be 28 as compared with a relative birth-rate of 42 is extremely satisfactory, since the rate of feeble-minded in this population has been shown to be amongst the lowest of any group. Miners comprise 6.7 per cent. of the total male population.

The almost regular decline of deaths from scarlatina from 1901 to 1912 by 56 per cent. is very remarkable and illustrates the steady growth of notification and prompt removal to isolation hospitals. The same decline of 57 per cent. is seen in the deaths from diphtheria which has fallen to 0.12 per 1,000 while its sickness rate fell to 1.57 per 1,000 in London.

Typhoid fever has almost disappeared since there were but two deaths in every 100,000 population in 1913 for the whole country, while some districts of London had but 9 cases of sickness per 100,000. There were but ten deaths from smallpox, while not one occurred in London in 1913.

The deaths from pulmonary tuberculosis, which in 1901 had fallen by 50 per cent. in fifty years were 38,083 in 1912 while the rate had declined from 1.26 in 1901 to 1.01 in 1912 or just 20 per cent. The Report, while speaking of the amount of overcrowding where 1 in every 13 families in all England and Wales lived in a tenement of one or two rooms, and while further stating that overcrowding is seven times in urban as in rural one-roomed tenements says "There can be no reasonable doubt that, were it not for the greater use of hospitals in urban districts, the excess in their death-rate over that of rural districts would be much higher than at present." The Report amply illustrates the axiom of Dr. Herman Biggs that "Public Health is purchasable; within natural limitations a community can determine its own death-rate."

P. H. Bryce.

Lead Poisoning: From the Industrial, Medical and Social Points of View. *Lectures delivered at The Royal Institute of Public Health by Sir Thomas Oliver, M. A., M. D., M. R. C. P. Cap octavo, 294 pages, one infold chart. Cloth, $2.00, net. Paul B. Hoeber, Publisher, 67 and 69 East 59th Street, New York. 1914.*

This little book launches at once into the first lead industry of concern, viz., mining of lead-bearing ores, and thereafter devotes some 90 pages to a brief description of the various industries and trades which are chief seats of saturnism. The forms of lead, its portals of entry into the body, and its general symptomatology make up 75 pages more. Lead poisoning in its relation to female life, motherhood, blood-pressure, urine, vital

organs, and its presence in drinking water are next discussed. "What constitutes lead poisoning?"—is a subject paramount wherever workmen's sickness compensation obtains. Twenty-five pages are devoted to a résumé of preventive and curative treatment, the latter devoted largely to the double electric bath method of Oliver and Clague. Finally, the carefully drawn factory and workshop orders of the Home Office are given in full for the industries considered.

All is written in the simple, conservative, but forceful statements which characterize Oliver's style. The whole portrays the years of experience which the author has had with this subject in his capacity as expert for the Dangerous Trades Committee of the Home Office. The lectures make a most entertaining monograph upon a scientific subject, and quite intelligible, indeed, to the lay reader. With some exceptions, the book well encompasses its expected field (the industrial, medical and social points of view).

The section headlines, in many instances, have very little relation to the subject matter discussed within, but the index is compensatorily complete. Some important lead-hazardous industries are not discussed. Rubber manufacturing, babbitting, founding, tempering and others. Repetitions occur, but they are of an emphatic nature, and by no means detract from the value of the production. The bibliography is abbreviated. We are, however, inclined to trust the author's vast experience for much of the evidence and conclusions which he presents. He fails to give any heed to Blum and others who doubt that potassium iodide has any influence upon the elimination of lead. His evidence that lead may be skin absorbed is not at all conclusive. The discussion upon anemia is not complete either in blood findings or the influences which vasoconstriction may play. He makes little attempt to differentiate the various types of saturnism, to theorize upon idiosyncrasies, and to point out the various sequelæ of lead poisoning. The more recent blood tests, involving toxicity of the plasma are not taken up, nor are trophic, vaso-motor, and reaction-degeneration phenomena. The pathology (nerves, muscles, blood, blood vessels—the relation to aneurisms, etc.), as well as the differential diagnosis, could all be greatly extended. The principles of extending compensation to this affliction might well be included. His plea for the use of the electrolytic bath in curative treatment has received a severe setback in the more recent experiments of Goadby and Oxley (*The Lancet*, London, October 3, 1914), both of whom doubt that it was lead which Oliver's chemist found deposited upon his electrodes, and both of whom deny that the method had any eliminative or curative tendencies at all upon either men or animals. It is very probable, as their experiments appear to show, that dissociation of the organic lead compounds in the body and their dialyzability through an animal membrane (the skin), in any appreciable amount, are most remote possibilities.

However, many recent advances in the knowledge of the subject are given, such as Gardner's findings that surfaces coated with quick-drying paints yield carbon-monoxide gas. Oliver is not convinced that lead predisposes to tuberculosis to any noticeable extent, that, in itself it causes a positive Wassermann reaction, and, as well known, he deprecates the value of basophilia, while he adds new evidence of negative character concerning blood pressure determinations in the diagnosis of early forms of the malady. "Lead in the urine occupies the same relationship to saturnism as Koch's bacillus does to tuberculosis," etc. He considers its determination in the urine quite productive of results. Upon this point many investigators will not agree with him.

Practically, the book well fulfils its title, it illuminates many puzzling features, and should have a wide distribution among physicians, chemists, factory managers, economy experts, law-makers and hygienists.

Emery R. Hayhurst.

HEALTH DEPARTMENT REPORTS AND NOTES.

REPORTS.

Albany, New York.

The 1913 report of the Albany Bureau of Health is included in the report of the Department of Public Safety and is rather overshadowed by the more imposing bureaus of fire and police. Dr. Joseph D. Craig, the Health Officer, makes a number of excellent and well-planned recommendations which are in accord with the latest tendencies in public health work.

During 1913, Albany had an unusual and serious menace to health in the high water of the Hudson which not only inundated part of the city but also the water filtration plant. A serious typhoid epidemic ensued and was followed by an epidemic of smallpox, both of them being efficiently combated and promptly suppressed. The smallpox hospital has gained so favorable a reputation that little difficulty was experienced in the hospitalization of cases.

Improvements during the year include the appointment of a milk inspector and the passage of rules for the inspection of milk; the appointment of a medical inspector of schools under the Department of Education; the beginning of garbage collection and the appointment of a garbage inspector. Sanitary conditions in Albany have in some respects been very primitive in the past and have not set as good an example to the rest of the state as the capital ought to do. Apparently a wave of progress has set in however and it is to be hoped that Doctor Craig's plans and recommendations for improvements will meet with success.

The form of the report could be improved by the elimination of some of the tabular reports and the introduction of an attractive description of the work of the bureau and its aims so that the citizens, seeing what was being done and what members of the staff were doing it, might be more inclined to appropriate more money and employ more workers.

Colorado Springs, Colorado.

The Department of Public Health and Sanitation of Colorado Springs presents for 1913 its usual attractive report, made more attractive by numerous illustrations of the beautiful mountains and drives outside of the city. Dr. O. R. Gillett, Health Officer of the city, pleasantly recalls the meeting of the American Public Health Association there during the year.

Those who attended the meeting will be interested to hear that he has introduced still more vigorous measures for the suppression of flies in the form of an ordinance requiring that all garbage and manure be removed and the premises properly cleaned at least three times a week during June, July, August and September. Other improvements include the abolition of the roller towel; the suppression of the common drinking cup in churches as well as at public drinking fountains; and the sterilization of garbage before being given to animals which are subsequently sold for food. The contract for garbage removal now brings in a revenue of $1,440 in contrast to costing the city $1,200 a year as before.

Doctor Gillett points out with emphasis that the large number of tuberculosis patients who come to the city to recover does not increase the liability to infection of others in the community and shows that only one death from tuberculosis occurred among the regular residents. The contagious disease situation in general seems to be excellent although not quite as good as in 1912.

The reports of the work of the department are largely tabular but are neatly and concisely presented and add to the general excellence of the report.

State of New York.

The First Annual Report of the New York State Public Health Council emphasizes the "new idea" in public health work-leadership rather than coercion.

The report covers the Council's activities since its creation in 1913 by the enactment of that state's new public health law. It discusses the important features of the Sanitary Code and gives in some detail the reasons for the enactment of the various sections.

Of course, leadership to be effective must be of the right kind. That the state is fortunate in having the right kind is evidenced by the list of members of the Council which consists of Dr. Hermann M. Biggs, Commissioner of Health; Dr. Simon Flexner, Director of Laboratories, Rockefeller Institute; Dr. T. Mitchell Prudden, Vice-President Board of Scientific Directors of the Rockefeller Institute; Mr. Homer Folks, Secretary of the State Charities Aid Association; Dr. Wilhelm Gaertner of Buffalo; Prof. Henry N. Ogden of Cornell; and Mrs. Ella L. Blair, Chairman, Public Health Department, General Federation of Women's Clubs.

The Council thus expresses the new idea of leadership in health work. "In the framing of this sanitary code, the Council steadily aimed to secure to the citizens of the state all the advantages which science and experience, especially during the last quarter of a century, have offered in the prevention of disease and in the promotion of the common welfare, with the least possible interference with the business, comfort and convenience of the people concerned."

The necessity for a state sanitary code as opposed to local codes is pointed out in the introduction to the report. The duty of enacting sanitary regulations had previously been exercised by 1,438 local boards of health. This made it possible to have that many kinds of health regulations. As a matter of fact, the Health Commission which framed the present health law discovered that many communities had no sanitary code. Most of the quarantine regulations were found to be obsolete and needlessly expensive and burdensome to the individual. Furthermore many of them had very little real value in the control of infectious diseases.

It is obvious, of course, that there can not be 1,400 different right methods of preventing disease and controlling epidemics; of farm sanitation and the preservation and protection of milk and other food supplies. Germs recognize no geography and are not controlled by city boundaries. No Chinese wall, even, could prevent the spread of epidemics.

Although this is so apparent to anyone with the slightest knowledge of health work and the principles of disease prevention, there is an occasional objection to the Council exercising what is called legislative functions. The objectors fail to realize, of course, that the principle is not new, and that if there is objection to conferring legislative powers in the enactment of sanitary regulations, there is less objection to conferring it on one board than on 1,400.

The Council states that it has attempted to enact a code that would be readily comprehensible to the citizens for whose use and guidance it is framed. In doing this it has eliminated not only useless sanitary procedures and "obsolete quarantine regulations" but has abandoned in its text those technical terms which, though still often used, have lost their earlier meanings and value.

"Thus the Council cherishes the hope," says the report, "that the Sanitary Code will prove to be effective, comprehensible and not unnecessarily rigorous in view of the large advantage to all which the adoption and enforcement of a more modern scientific code promises."

Seven chapters to the code have thus far been enacted. The first is entitled "Definitions and General Provisions"; the second relates to "Communicable Diseases"; the third to the "Production and Handling of Milk and Cream"; the fourth regulates the practice of midwives; the fifth relates to "Labor Camps"; the sixth to "Nuisances"; and the seventh enacts regulations relating to "Spitting; the Common Drinking Cup; the Common Towel; and Barber Shops."

In discussing the chapter on milk and cream the Council points out in its report that the regulations on this subject are especially important because milk, more than any other food, is likely, if improperly handled, to afford a breeding place and distributing medium for disease germs. Although the Council recognized the necessity of wise regulation of the production and sale of milk it endeavored to disturb the dairy business as little as possible.

"It was the sense of the Council," says its report, "that to obtain the best results in the production and handling of milk, discretion, tact and good judgment should be exercised, especially in the beginning, by the health officer in scoring dairies. It is believed that by this procedure not only the milk supplies of the state but the interests of the farmer may be safeguarded through such adequate pecuniary returns to him as the improvement in the quality of his milk may justify."

The same spirit is shown in the comment on the chapter relating to midwives. "The provisions of this chapter," says the Council, "are by no means adequate to meet the requirements of modern science and practice in midwifery. But in the absence of adequate facilities for the proper education of midwives in the state, these regulations seem to afford a reasonable temporary safeguard pending the organization of suitable training schools or systems of instruction."

In discussing the section relating to labor camps, the Council says it believes that these camp regulations, without imposing undue burdens upon private campers or those responsible for labor or construction camps, will safeguard the citizens of the state against pollution of water supplies and serious nuisances which are now not infrequent.

The Council describes its methods in obtaining information in its discussion of the seventh chapter of the code. Through the District Sanitary Supervisors the opinions of health officers and others throughout the state were obtained as to the necessity for the enactment of the regulation prohibiting spitting in public places, the common towel and drinking cup, and in regulating barber shop practices so that patrons may be assured of clean and sanitary conditions.

This chapter provides also that the utensils and instruments used by manicures and chiropodists shall be kept clean and sanitary, and that copies of the regulations shall be posted in all barber shops and places where manicuring and chiropody are done.

It was the almost unanimous opinion of health officers that these regulations should be included in the Sanitary Code.

Besides the enactment of the code, the Council, as required by law, has fixed the qualifications of directors of divisions in the Department of Health, sanitary supervisors and public health nurses.

DEPARTMENT NOTES.

Municipal Sanitation in Mississippi.

The Southern Medical Journal of February, 1915, publishes an article by Doctor Rowan of the State Board of Health dealing with the accomplishments of that organization during the last three years.

The following is his summary of results in terms of the things actually accomplished:

Results.

"This year, (1914) so far, 20,752 inspections of public service places have been made, and the number is increasing with each inspection. September alone showed 4,133 inspections by the assistant inspectors. Three years ago screened fruit was almost unknown; now practically 98 per cent. is screened during fly season. Then, there were but two whitewashed dairy barns in the state; now we have more than 400. Then only 48 cows had ever been tested for tuberculosis; now the number is more than 2,000. Then, there was not a clean, well-built slaughter house in the state; now nearly all are screened, whitewashed and otherwise sanitary. Then hotels and restaurants were often unscreened, with roller towels and common drinking cups evident everywhere; now

you see them no more. The jails were vermin-laden and unclean throughout, and are not palaces yet, as we have found our supervisors and sheriffs hard to reach, but newspaper publicity of the past few weeks is working wonders here. Then railroads were sweeping in the presence of passengers; now they do their cleaning before they come over the state line. Then most health officers were inefficient and considered mere figureheads in their communities; now they are becoming a vital part of the community, because they are contributors to its betterment."

New York's Experience with Meningitis.

On July 1, 1910, the New York Board of Health took over from the Rockefeller Institute the preparation of anti-meningitis serum and now offers to physicians the assistance of experts for treatment of the disease. The diseases which the expert is called to examine are mainly epidemic meningitis or other purulent meningitides due most commonly to streptococcus and pneumo-coccus.

The Department is treating an increased number of cases each year and it is important to note that they have succeeded in decreasing the death-rate nearly one-half in the last two years. The treatment of these cases consists in quarantining the patients and those in contact with them who show meningococci in cultures from the nose and throat. In only four instances, however, has more than one case been observed in the same family. To each patient an intraspinal injection of anti-meningitis serum is administered. This is a specific immune serum of value only in combating meningococcus and then only when administered inside the membrane of the spinal cord. In making this puncture great care is taken as to the position of the patient. The serum is not forced into the cord rapidly and it is found that very little pain is inflicted. This serum is injected whenever the fluid drawn from the spinal cord is found to be cloudy. Usually four to six injections of 20 cc. are sufficient. Carriers are treated by swabbing the nose and throat two or three times daily with 20 per cent. argyrol.

The success of the New York Health Department in combating this disease seems to justify the expert use of anti-meningitis serum.

Dubois and Neal, *American Journal of Diseases of Children*, January, 1915.

Advocates Uniformity.

Dr. George T. Palmer, the president of the Illinois State Association for the Prevention of Tuberculosis, in a recent article has struck a very vital point—uniformity in anti-tuberculosis education. There are several agencies in the field, among them being The American Medical Association, State Boards of Health, local tuberculosis associations, sanatoria and public lectures, disseminating the "accepted truths" concerning tuberculosis. In the war against tuberculosis, many instances are known where the commonly-taught notions have not been able to stand up against the guns of experience and truth. The purely educational man has his definite views. The dispensary man, unaffiliated with sanitoria, has a different view from the man of the sanatorium who is not connected with the field work.

Local tuberculosis organizations should seek close coöperation with local health departments, medical societies, nursing associations and these bodies, in turn, with the state organizations. Annual conferences for education between the representatives of various state agencies would go far toward bringing about more uniformity.

Doctor Palmer's suggestions are:

"First, that there should be a uniformly adopted creed made up of the essential facts carefully chosen for the public, but sufficiently elastic to keep pace with the genuine additions to scientific truth.

"Second, that this creed should represent the views not only of educators and organization workers; but that it should represent the best thought of the sanatorium, clinical and social workers as well.

"Third, that the inability of all classes of workers to accept an alleged 'truth' should brand it as too uncertain for use in popular education.

"Fourth, that all of the various interests

in anti-tuberculosis work should join together in furthering this most important campaign of education."

Whooping Cough.

A very attractive bulletin, entitled "Whooping Cough—A Dangerous Infectious or Catching Disease," has just been issued by Dr. G. W. Goler of the Health Bureau of Rochester, N. Y. The booklet is small, attractive, and very effectively done. On each page are at least four cuts of a little child in the midst of a coughing paroxysm, while in simple language and effective, boldface type appear the history, cause, symptoms, effect and treatment of the disease.

A Unique Funeral.

The story of a unique funeral is told in the February number of the *North Carolina Health Bulletin*. The story is told by Dr. Henry Boswell of Mississippi, of the late L. M. Gross of that state who died recently of tuberculosis. He had contracted the disease at the age of 26, and, by reason of spending $5,000 and several years in searching for health via the patent medicine route, was pronounced incurable by a specialist to whom he finally went. He then posted himself thoroughly concerning the disease, and spent the last four years of his life writing for local papers and in preparing a bulletin on the disease from the viewpoint of the layman. Finally he planned his own funeral program and according to his own request a campaign was started at that time, the object of which was to secure the erection of a "first class institution in north Mississippi for the treatment of tuberculosis."

Social Hygiene.

According to *The American Social Hygiene Association Bulletin*,

"*The Public Health Report* of the United States Public Health Service, January 29, 1915, lists for the first time in its department 'Prevalence of Disease' reports of gonorrhea and syphilis. These first reports are from Louisiana, for December, 1914."

Some of the bills pending before the various state legislatures, having to do with social hygiene considerations are:

"Bills requiring a medical certificate for marriage: South Dakota, Vermont, New York, Indiana, and Missouri; Oregon and Wisconsin amending existing laws.

"Injunction and abatement bills: Missouri, Michigan, Indiana, and New Hampshire.

"A bill penalizing transportation for immoral purposes within the state: Wisconsin.

"Penalizing the keeping of bawdyhouses: Wyoming.

"Maintenance and support of bastard: Missouri.

"Sterilization of certain classes of insane, feeble-minded, and defective persons: Nebraska, Washington, Iowa, and Missouri.

"Pandering: Washington and New Hampshire.

"Prohibiting quack advertisements for cure of venereal disease: New York.

"Requiring venereal diseases to be reported: New Hampshire."

New York's Infant Mortality.

The following extract from the New York Health Department's *Weekly Bulletin* of February 20, is most interesting:

"The infant mortality rate for New York City for 1914 is the lowest in the history of the city. The decrease in this death-rate has been regular and persistent since the Bureau of Child Hygiene of the Department was organized and since infant sickness and death were recognized as a public health problem of the first magnitude.

"A brief survey of the mortality rates since the organization of this bureau is of interest in showing what must be the trend of future work if good results are to continue.

"In 1907 the death-rate under one year of age was 144 per thousand births; in 1914 it was 94.6 per thousand births. An analysis of these figures follows:

	1907. Per cent.	1914. Per cent.
Diarrhœal diseases	31	22
Respiratory diseases	21	22
Congenital debility	32	42
Contagious diseases	4	4
All other causes	12	10
Total deaths	100	100

"As may readily be seen by the above table, the greater part of the reduction in infant mortality has taken place in that class of diseases known as diarrhœal. The respiratory diseases show a slight increase. The deaths from congenital debility show a marked increase from 32 per cent. to 42 per cent. of the total deaths, the contagious diseases remaining the same for the two periods.

"While not abating its efforts to reduce infant morbidity and mortality from diarrhœal diseases, it is evident that the program of the Bureau of Child Hygiene for the future must include increased and far-reaching efforts to reduce the present death-rate from congenital debility and respiratory diseases, if the decrease in the infant death-rate is to continue, or even if the present infant death-rate is to be maintained.

"The accompanying table shows the death-rate of infants under one year of age in the ten largest cities in the United States for the year 1914 per thousand births reported."

New York	94.6
St. Louis	103.3
Boston	103.7
Pittsburg	115.2
Cleveland	116.4
Philadelphia	117.6
Buffalo	121.5
Detroit	122.4
Chicago	132.7
Baltimore	154.6

Cincinnati School Inspection.

In an enlarged weekly bulletin Vol. 6, No. 8, of eight pages, the Cincinnati Board of Health gives a very interesting account of the history of school medical examination during the last six or seven years in that city. So successful and beneficial has it become now that "those most active in their opposition (at first) are now correspondingly earnest in their words of commendation." The amazingly large number of phases which the work has assumed and the large number of children treated have seemingly justified many times all of the time and labor which the work has demanded. Health officers will find this report quite comprehensive and instructive.

Will Train Health Officers.

"Believing that the greatest need at the present time of the State of North Carolina is trained health officers, Dr. W. S. Rankin, Secretary of the State Board of Health of that state, has devised a plan which will be put into execution at once, whereby he will train men for this important work. At the present time there are more than a dozen counties in the state where full-time county health officers could be employed, but there are no men available for the work. Doctor Rankin believes that by taking intelligent physicians and putting them through a six- or eight-months' course of special training, he can produce health officers who will be equal or superior for his purposes to those training in some of the professional schools. The following is an outline of the course which he proposes:

"(a) State Health Administration or State Health Laws and Policies, four weeks. During this course the apprentice is assistant to the executive officer of the Board, answers as much of the official mail as he can, and is referred to and quizzed upon the proper literature.

"(b) Vital Statistics, four weeks. Actual experience is given in every phase of the work of the Bureau of Vital Statistics, is referred to proper references on Vital Statistics and is required to study and criticize the vital statistics table appearing in various reports.

"(c) Popular Sanitary Education, three weeks. Preparation of articles for the Bulletin and press service, study of exhibits, slides and lanterns, and as assistant to the Bureau Chief.

"(d) Tuberculosis, four weeks. During this time the apprentice assists at the State Sanatorium and in the Bureau for Tuberculosis and is assigned proper reading, with quizzes upon it.

"(e) Laboratory, four weeks, including with the routine examinations of the State Laboratory and quizzes on the interpretation of water analysis and upon epidemiological procedure.

"(f) County Health Work, six weeks. During this time the apprentice will serve

as assistant to an efficient county health officer and will be sent to see special phases of county health work in different counties.

"On completion of this six or seven months' practical course, a certificate of proficiency in public health work signed by the President and Executive Staff of the Board will be given the apprentice."

Journal of the Outdoor Life, March, 1915.

Must Know Demography.

"Surgeon-General Rupert Blue of the United States Public Health Service recently announces that hereafter all candidates up for examination on the corps of physician will be asked a set of questions on vital statistics and demography. The statistics will comprehend those of population, conjugal condition, birth, morbidity, and mortality, including special questions on life tables. Commenting on this step, Surgeon Blue says:

"'We feel that the relationship of the practising physicians to the registration of births and deaths and to the reporting of notifiable diseases is such that we may properly assume that a man who has been graduated in medicine and is ready to enter practice is familiar with the essentials of demography.'"

Journal of the Outdoor Life, March, 1915.

Street Cleaning in New York.

The importance of street cleaning in the sanitation of a city makes the practical side of this problem of public health interest. *Municipal Engineering* for January, 1915, contains a brief account of the process as it is carried on in New York City.

In 1913 the street-cleaning department, New York City, had an appropriation of $8,403,205. This was to pay the expenses of cleaning streets and removing ashes, rubbish, street sweepings and garbage as well as snow and ice in winter.

In this work the city is divided into districts; each district has 624,864 square yards of pavement with a daily cost of cleaning of $238.52. The cost of hand sweeping is thirty-eight cents per 1000 square yards or $3.07 per cubic yard of sweepings. The complete cost of removing of dirt by this method is fifty-two cents per 100 square yards.

Other methods for cleaning the streets have been adopted with the following results: Street cleaning with the Merritt Sweeping machine costs the city forty-one cents per 1,000 square yards; with the Emerson Vacuum cleaner it costs forty-three cents per 1,000 square yards. Flushing the street by means of hose attached to a hydrant costs sixty-five cents per 1,000 square yards although this flushing can be done by the use of "Flushing Machines," operated by means of compressed air, at a cost of thirty-nine cents per 1,000 square yards. The use of this machine provides the most thorough and economical method of street cleaning thus far employed.

Chicago Street Car Investigation.

A series of investigations on the street cars and elevated trains of Chicago have been made by the Department of Health of that city. Upon securing an amendment of the city ordinances relating to the control of the heating and ventilating conditions of elevated trains, air samples were taken in 220 cars and it was found that in 150 of these cars, the presence of carbon dioxide was far in excess of the standard set by the ordinances. Action is to be taken in regard to these violations.

The failures to operate ventilating fans when the conditions need it, have been enormous—over 1,000 reports of failure accumulating in a short time.

Bacteriological examinations of the straps used by standing passengers in street cars were made. A large number of bacteria were present but, except in isolated circumstances, they were of little sanitary significance. A comparison was made between the number of bacteria found on leather and celluloid straps. The average number of colonies on blood serum plate showed 14 from the celluloid straps and 136.6 from the leather straps.

Frauds in Sales of Disinfectants.

The public is beginning to realize that one of the most serious humbugs of which it is the victim is the sale of disinfectants which are either entirely worthless or of very doubtful value. This is a matter not

only of dollars and cents, but of life and death. It is believed that thousands of lives are sacrificed in the United States every year because the laws in most states permit the sale of disinfectants which do not disinfect.

It is quite evident that state control of disinfectants is as vital to the public welfare as enforcement of the pure food laws. Yet the law as it now stands in every state except Maryland permits the market to be flooded with preparations which have no efficiency whatever in killing disease germs. Many of the most widely advertised disinfectants are, it is charged, practically devoid of effect on germs and wholly so when diluted as recommended by their manufacturers.

To remedy this situation in New York State a bill is to be introduced at the next session of the Legislature to standardize disinfectants and place their manufacture and sale under strict official control. The proposed law will require every disinfectant made or sold in the state to bear a label stating its power over germs as compared with that of pure carbolic acid.

Pacific Pharmacist, January, 1915.

Health Department and Public Library Coöperate.

One of the measures adopted by Washington, D. C., in looking after the health of its babies, involves an interesting form of coöperation between the health department and the public library. A practical and compact little pamphlet entitled "How to Keep Your Baby Well" is sent out by the health department to each mother upon the report of the birth of her child. In a second edition of this pamphlet which has recently been issued there appears a section on "Books that Mothers Ought to Know," in which mothers are told that they can obtain at the library the best books on the care of babies. It is stated that the library has many copies of books of this kind which may be borrowed entirely free of charge, and some of the standard volumes are mentioned. The requirements for taking out a library card are also made simple by means of a few practical instructions.

The American City, February, 1915.

Relative Values of Improvements Affecting the Sanitation of Villages.

The Ohio State Board of Health published a paper by W. H. Dittoe, Chief Engineer of the Board, in the October, 1914, *Bulletin* which is worthy of attention. It deals with the appropriate expenditure of money in small towns or villages but the facts are certainly applicable to larger municipalities.

Mr. Dittoe writes as follows:

"Each year a vast sum of money is expended for the installation of municipal improvements. Frequently the expenditures are made without serious thought and study to determine the relative benefit to be derived, and as a result it is found that the financial assets of the community have been depleted and the maximum benefit has not been secured. In other words the funds have been misspent.

"The principal improvements made by a municipality, particularly the small village, may be classified under three general headings as follows: (1) Improvements for the promotion of public health and sanitation; (2) Improvements for the promotion of safety and convenience; and (3) Improvements for the promotion of education and social betterment."

Mr. Dittoe shows that improvements belonging in the second and third divisions have frequently caused the expenditure of sums of money altogether out of proportion to their importance, and left the municipality without funds for much needed water works or sewerage systems.

The local health official is looked upon by Mr. Dittoe as being the one to exert influence to prevent this condition. "He should strongly oppose the extravagant expenditure of public funds for improvements to promote convenience until adequate provision for the promotion of the public health has been made by the installation of a satisfactory public water supply and sewerage system. He should endeavor by conferences with the village officials and citizens to bring about the realization of maximum benefits to the community."

PUBLIC HEALTH NOTES.

Steam Disinfection for Sewage on Common Carriers.

"Live steam for sewage disinfection is employed in a device suggested by Prof. E. B. Phelps, and designed by Leslie G. Frank both of the United States Public Health Service. The apparatus is described by Mr. Frank in the January 1 issue of the *Public Health Reports*.

"The device is for use on railway coaches which pass over watersheds, and on vessels which, according to findings of the International Joint Commission, have been responsible in large measure for the pollution of the Great Lakes near the intakes of municipal water supplies."

The apparatus consists of a tight insulated tank having influent and effluent pipes for the sewage and an influent live steam pipe. The steam pipe is fitted with a valve operated by a float which rises and falls with the level of the sewage in the tank. The heights at which steam is turned on and off may be easily predetermined.

Mechanically and bacterially the efficiency of the process is practically 100 per cent. The cost of installation is not known; of the apparatus alone it will be about $15 to $20 per railway coach. The cost of operation per tank per coach per day is estimated at 1½ cents.

Public Health Work Among the Indians.

The work of the United States Indian Medical Service is very briefly described by Dr. Joseph A. Murphy in *The Survey* for January 23. The difficulties which the Indian problem presents are probably greater and more numerous than in any other. Doctor Murphy says, in his introductory paragraph, "Ignorance, superstition, ancient habits and customs, indifference, poverty, unfavorable environment, lack of knowledge of the English language, and frequent lack of industrial ambition—all have to be combated in order to effect any marked or permanent improvement.

"The great majority of Indian homes are extremely insanitary, the principal defects being lack of cleanliness, lack of light and ventilation, overcrowding, improper disposal of refuse and excreta, improper care of sick and infants, improper protection or preparation of food, and the neglect of isolation of communicable diseases."

Under such conditions, it is no wonder that all communicable diseases flourish. Tuberculosis and trachoma are the most prevalent, and are greatly in excess of those among the white race. Practically all children are reared in the presence of one or more cases of tuberculosis, resulting in almost universal infection in early childhood.

The trachoma problem is very serious, and the disease is difficult to check. Of 39,231 Indians examined, 8,940 were infected—22.7 per cent. About 20 per cent. of all Indian pupils entering school are infected.

The work of combating these diseases is under the immediate direction of the commissioner of Indian affairs. For the 300,000 Indian wards of the government there are now employed under him 200 physicians, 80 nurses, 7 dentists, 70 field matrons, and 77 miscellaneous hospital employees. There are 49 hospitals with a total capacity of 1,249, and 4 tuberculosis sanatorium schools with a combined capacity of 250." Approximately $400,000 has been appropriated during the present (1914) fiscal year.

The problem is being attacked in three ways—(1) by the provision of hospitals and sanatoria, (2) by efforts to better the industrial and economic status of the Indian and (3) by educational methods. The last is the most important and is receiving the greatest attention. Particular efforts are being made in the schools, and "great stress is being placed on the practical teaching of hygiene and the prevention of disease."

Coyotes and Rabies.

"The spreading of rabies by infected coyotes among cattle grazing in the national forests has assumed a grave aspect, accord-

ing to a report received by the forest service from the district forester in charge of the forests in Washington and Oregon. Numerous townships in eastern Oregon, it is reported, have ordered that all dogs be muzzled, lest those that have been bitten by rabid coyotes develop hydrophobia and attack human beings or domestic animals. Efforts are being made by the state authorities of Oregon to stop the spread of hydrophobia by this means and officers of the forest service are coöperating in attempts to kill off the coyotes. In one country alone a loss of three hundred head of cattle is charged to rabid coyotes."

Science, February 5.

New York State Tuberculosis Campaign.

"The earthworks of the worst enemy of the human race, tuberculosis, are being valiantly stormed in New York by regiments of physicians and laymen under the efficient leadership of officers of the State Department of Health.

"The plan of campaign, as briefly outlined by Edward A. Moree, advisory expert in public health education, involves:

"1. Employment by city, town, and village health boards of visiting nurses to work under the direction of the health officer.

"2. Establishment of dispensaries by health authorities of the larger cities and villages for the examination of suspected cases.

"3. Establishment of open-air schools for anemic and sickly school children predisposed to the disease.

"4. The efficient medical examination of school children for the discovery of early cases of the disease and for the removal of adenoids and enlarged tonsils, and for the discovery of other physical defects.

"5. Most important of all, the establishment of tuberculosis hospitals by county boards of supervisors for the cure of early cases and the segregation of advanced cases."

The Modern Hospital, February, 1915.

Anticholera Vaccination.

In an article by C. Dopter in *Paris Medical* for February 2, stress is laid on the efficiency of this procedure, as shown in the Balkan wars. Arnaud reported that whereas the incidence of cholera among 14,332 unvaccinated officers and enlisted men was 5.75 per cent., among 21,216 men vaccinated once was but 3.12, and among 72,652 men vaccinated twice, 0.43. In the civil population of Greece, Cardamatis reported analogous percentages of 2.12, 0.26, and 0.01, respectively. The vaccine used in these cases had been prepared at the Pasteur Institute in Paris and consisted of cultures on agar heated to 60° C. for one hour. Dopter considers three injections at five-day intervals essential if immunity is to be acquired. Doses of one, 1.5, and two cc., respectively, should be administered in succession.

New York Medical Journal, February 20, 1915.

Active Immunization of Hay Fever.

It has long been known that hay fever with its characteristic itching of the eyes, sneezing, serous discharge from the nose, obstructed breathing and itching of the palate and face is caused by the action of the pollen grains from such plants as timothy, redtop, bluegrass, ragweed and goldenrod which are carried by air currents and thus inhaled. Recent investigations show that the pollen acts like other protein compounds when injected into the blood and consequently we may expect the laws regarding immunity from protein poisons to hold true for this disease. Some people are much more susceptible to the disease than others and this susceptibility is often passed from one generation to another as an hereditary trait.

The *New York Medical Journal* of February 6, 1915, prints a preliminary report concerning methods of immunization for this disease. Pollen extracts were made from some of the above-mentioned plants and introduced subcutaneously in small amounts before the hay fever season. Of six cases thus treated one was cured for the season, four exhibited very mild symptoms and one was not improved. Five cases were treated during the season of which four showed rapid recovery. It is believed that the two cases which resulted unfavorably did so because of irregular treatment.

One case was rapidly cured by injecting a large quantity of immune serum made from the blood of a person previously immunized by the former method.

The work done thus far would lead us to believe that, as the technic for securing pollen extract is improved, immunity for this disease can be readily produced by one or two courses of treatment, and that evidence of sufficient immunity can readily be secured by the complement fixation test or by an examination of the "wheal" produced by skin scarification.

The Value of Blood Pressure Readings and Examination for Life Insurance.

The Louisville *Medical Journal* for February, 1915, contains an article which sets forth the experience of the Northwestern Mutual Life Insurance Company with blood pressure readings. The article is written by the medical director of the company and seems to show that the addition of these requirements in testing applicants for insurance has resulted very satisfactorily.

The examination of nearly 20,000 people between the ages of 15 and 60 has shown that the blood pressure varies from about 120 to 135 mm. according to the age of the person, the average being 128.91. By dividing the people thus examined into classes according to the systolic pressure and following the life history of each case definite evidence has been obtained concerning the relationship of blood pressure to the expectancy of life.

The author draws the following conclusions:

"First. A persistent systolic pressure of 15 mm. above the average for any given age should at least excite suspicion and call for further careful study and painstaking investigation.

"Second. Applicants of all ages with a persistent systolic pressure above 150 mm. show a mortality higher than normal. The mortality increases as the pressure increases and also becomes greater progressively with the time of exposure.

"Third. The deaths of such applicants as had a high systolic pressure at the time of examination were caused, as might be expected, to a large extent by such diseases as apoplexy, arteriosclerosis, organic heart disease and nephritis."

Child and Infant Hygiene.

The January number of the *Journal of the Royal Sanitary Institute* is largely given over to reports from the sections on "Hygiene of Infancy and Childhood at the Blackpool Congress." In the president's address, Professor Kenwood points to some recent achievements in anti-natal and infant hygiene and suggests that this important work should cease to be sporadic and that a general plan should be adopted for carrying it forward. He believes that training for motherhood should begin by the teaching of elementary hygiene in the schools and that special teaching should be provided through infant care centers for young adult women and expectant mothers. Again the medical men and midwives should devote more time to the study of infant hygiene than at present and more should be expected of them in the way of educating the public.

Doctor Nankivell, in discussing the care of children, gives the following classifications of the causes of disease and mortality:

"A. Pre-natal influences: (1) Poorness of stock; (2) Inherited disease or tendency to disease; (3) Causes leading to premature birth.

"B. Post-natal influences: (1) Ignorance or indifference of parents; (2) Poverty of parents; (3) The later effects of neglected infantile condition; (4) Insanitary surroundings; (5) Infectious diseases and their sequelæ."

He continues with a discussion of the means of preventing these conditions from which he draws the following conclusions:

"(1) A certificate of health should precede marriage; (2) The notification of pregnancy is desirable; (3) Extended teaching should be given to schools on the subject of domestic hygiene; (4) The present scope of schools for mothers, of children's consultations, and of health visiting should be enlarged to include all children who are under school age."

A Review of the Work on Tuberculosis in Children.

An article of some 30,000 words appears in the *American Journal of Diseases of Children* for February, 1915, which summarizes practically all of the important articles which appeared during the past year dealing with tuberculosis in children and gives a complete bibliography of the subject.

The article was written by May Michael, M. D., and gives in concise form the results of investigation concerning the portals of entry, bacteriology, diagnosis, symptomatology, prophylaxis treatment and modifications of the disease.

Sensitized versus Nonsensitized Typhoid Bacteria in the Prophylaxis and Treatment of Typhoid Fever.

An article on the above subject by Dr. A. L. Garbat appeared in the *Journal of the American Medical Association* of February 6, 1915. A brief extract of this article follows:

"—By sensitization is meant the mixing of an antigen (bacteria, red blood cells, proteins, etc.) with its specific antibodies, these antibodies being found in the serum of an animal which has been previously immunized with the particular antigen. The inoculation of dead typhoid bacteria (ordinary vaccine), as a prophylactic measure against typhoid fever is now well recognized. If such vaccine causes mainly a bacteriolytic reaction, and sensitized vaccine mainly a bacteriotropic response, would it not be well in prophylactic immunization to inoculate with both varieties? In this way a combined form of immunity would be obtained. The dose of typhoid vaccines for therapeutic purposes is far from definitely established; as a rule, bacteria can be given in much larger doses when sensitized than nonsensitized. In the series of cases reported, 500 million of sensitized bacteria were employed as the standard dose, both for the first and subsequent inoculations; though, naturally, one had to be guided by the severity of the illness, age of the patient, and reaction from the inoculation. From the results observed, the conclusion is reached that the treatment of typhoid with sensitized bacteria offers a more rational therapy from an immunological point of view than that by ordinary nonsensitized vaccine. The repeated inoculation of large doses, even in very ill patients, was not attended by any harmful effects or a distinctly negative phase; the general course of the disease seemed milder and complications less, while the crisis in the infection took place in but a small proportion of cases; the improvement usually being gradual."

New York Medical Journal, February 20, 1915.

People's Laundry to Supplement Public Baths.

The important function of the fourteen free public baths in New York City which had an attendance of four million in 1914 is well known. Realizing the difficulty of the poor in securing clean clothes, the Bureau of Public Health and Hygiene of the Association for Improving the Condition of the Poor has recently established two institutions to supplement the public baths.

With the Bureau of Public Buildings they have established a public wash house on West 28th street where for a nominal fee women may come and wash their clothes in clean and attractive quarters. The second enterprise carried on with the Department of Social Welfare was the establishment of the Milbank Semi-public Wet Wash which washes thirty pounds of white clothes for twenty-five cents, ten cents more being charged for collecting and delivery. The patronage of this laundry is rapidly increasing and its efficiency as a public health measure may be realized when we know that among fifty-three thousand people in the Hudson bank section, 99 per cent. of the families were without baths, 45 per cent. without wash tubs and 94 per cent. without hot water.

The Modern Hospital, February, 1915.

A Rare Newspaper.

The New York *Tribune* has recently adopted the seemingly rash policy of guaranteeing its readers against loss from accepting at its face value the matter in its own

advertising columns. This policy is apparently aimed especially against the fraudulent patent medicine industry. The *Tribune* is a leader among newspapers in assuming this stand but as it itself predicts, it is not likely to stand alone long.

Alcohol and Iodine as Germicides.

The New York Medical Journal of February 13, 1915, published a report of some experiments made by Albert Comstock, M. D., in comparing the efficiency of alcohol and iodine as germicidal agents.

The organisms experimented with were B. subtilis, B. anthracis, B. coli communis and Staphylococcus pyogenes aureus and the solutions used were 95 per cent. and 70 per cent. ethyl alcohol, U. S. P. tincture of iodine, equal parts of iodine and alcohol, tincture of iodine and water in equal parts. In summarizing his results the following deductions may be made:

1. Aside from a solvent and cleansing agent, alcohol is not an antiseptic of value although the weaker solutions possess more antiseptic value than the stronger.

2. Iodine either in the tincture or equally diluted by alcohol or water is a very efficient germicide. It is interesting to note that the iodine works equally well when diluted with water.

The Home Hospital Experiments for Consumptives.

Publication No. 84 of the New York Association for Improving the Condition of the Poor gives an account of an interesting experiment in treating consumptives without breaking up the unity of the family. A summary of the experiment follows:

The Home Hospital experiment undertaken by the New York Association for Improving the Condition of the Poor was established to show that with better housing conditions, reasonable segregation and more adequate medical and nursing supervision, tuberculosis could be (1) prevented from spreading to the well members of a family, (2) cured in many incipient cases and (3) improved in the more advanced cases; larger earnings could be gained and the family could be rehabilitated physically, economically, and socially. At the end of two years the Home Hospital comprised forty-eight apartments, four of them used for administration, situated in the East River Homes, 78th Street and John Jay Park, New York City. Those families were chosen in which both poverty and tuberculosis were incipient and where under other treatment the home would be broken up. Sixty-two families, including 207 patients and 113 well members, have come under the supervision. Before discharge sanitary homes and proper employment are secured for the patients. The results of two years of the experiment have shown the desired ends, with a cost less than treatment which involves sending the members of a family to sanatoria, preventoria and orphan asylums. It attacks the problem of tuberculosis with the family as the unit and opens up a new field for the control and prevention of the disease.

Tuberculosis Sanatoria.

According to the report of the Advisory Commission of the Minnesota State Board of Health, the various states rank as follows in regard to the number and character of sanatoria for tuberculosis patients within their borders:

Pennsylvania leads in the work with 114 county sanatoria and 3 state sanatoria. New York has 12 county sanatoria in operation and has made levies for 15 more. It has 1 state institution.

Massachusetts has the largest number of state sanatoria, having 5, with capacity of 1,100, and it has 32 city sanatoria with a capacity of 1,359. Connecticut has 4 state and 5 city sanatoria. Ohio has 20 county institutions; Wisconsin has 8 in operation and 1 levy being made; California has 5 city sanatoria; Indiana and Iowa, 4 county sanatoria; Kentucky has voted 4 levies; Michigan has 3 in operation and taxes levied for 3 more; New Jersey has 5, Illinois 2, and Texas is now building 5. California, Illinois and Kentucky have no state institutions and there are fourteen states without any county or city sanatoria in operation.

Public Health Gardening.

In 1913 the Philadelphia vacant lot gardening movement cost $7,261 and the gardens under cultivation produced, it is estimated nearly $28,000 worth of garden crops. Not only that, but these same gardens contributed materially to the better living of hundreds of families, and to their increased health, education and pleasure. In short, the plan as thus tried has been an unqualified success and in addition to the benefits already noted has had a wholesome civic influence not only in Philadelphia, but in other cities that have been influenced to experiment along similar lines.

Press Service, Chicago Department of Health.

A Re-organized Service.

Especially worthy of observation is the re-organized and rejuvenated campaign for better health which has been inaugurated in Minnesota since the situation there was investigated at the request of the health department by the United States Public Health Service. Public education by means of pamphlets, news letters, cartoons and the like is being properly emphasized. Dr. H. W. Hill, formerly Director of the Institute of Public Health in London, Ontario, is now the Executive Secretary of the Minnesota Public Health Association and under his supervision great things will doubtless be accomplished.

Osler's Challenge.

Sir William Osler, writing in the *American Magazine*, throws down the following challenge to the anti-vaccinationists.

"A great deal of literature has been distributed casting discredit upon the value of vaccination in the prevention of smallpox. I do not see how any one who has gone through epidemics as I have, or who is familiar with the history of the subject, and who has any capacity left for clear judgment, can doubt its value. Some months ago I was twitted by the editor of the *Journal of the Anti-vaccination League* for 'a curious silence' on this subject. I would like to issue a Mount-Carmel-like challenge to any ten unvaccinated priests of Baal. I will go into the next severe epidemic with ten selected, vaccinated persons and ten selected unvaccinated persons—I should prefer to choose the latter—three members of Parliament, three anti-vaccination doctors, if they could be found, and four anti-vaccination propagandists. And I will make this promise—neither to jeer nor jibe when they catch the disease, but to look after them as brothers, and for the four or five who are certain to die, I will try to arrange the funerals with all the pomp and ceremony of an anti-vaccination demonstration."

A National Employment Reserve for Lean Years and Seasons.

Mr. N. I. Stone, chief statistician of the Wage Scale Board of the Waist and Dress Industry in New York, advances a plan for a reserve to employ idle workmen on various national works. Mr. Stone's article, appearing in *The Survey* of January 23, 1915, is appropriate at this time when the working men are suffering from want of occupation.

The proposed plan provides for a system, likened to the new Federal Reserve Banking System, which is to care for surplus laborers as the banking system does for surplus money. This surplus labor is to be utilized on public works, such as the building of roads, draining of swamps and other reclamation work and the like. Nationwide coöperation is looked for, and states and other municipalities are expected to assist in the utilization of this labor in their own undertakings.

Mr. Stone gives figures to show the loss to the country due to unemployment, and it reaches the enormous sum of about three billion dollars. There are additional other losses which it is impossible to estimate but whatever the total may be, it must be borne by society as a whole. The suffering workers must draw on their own savings, upon charity and society through various agencies. The proposed plan is to prevent this waste and loss by providing a well-organized comprehensive scheme of unemployment insurance.

As many public health problems are greatly affected by the economic condition of the people, any plan which prevents needless waste and tends to improve financial conditions will also assist health work.

INDUSTRIAL HYGIENE AND SANITATION.

A Bulletin Concerning Industrial Hazards and Occupational Diseases.

In February the Ohio State Board of Health issued a 438-page bulletin dealing with the above subject. The bulletin includes a discussion of legislative enactments, the general principles of industrial hygiene, the common industrial health hazards such as dust, heat, fatigue, germs and poisons, specific health-hazardous processes, occupational diseases and measures of preventions.

The report was prepared by E. R. Hayhurst. It is exhaustive and gives a careful summary of industrial conditions in Ohio. The corrective measures to be recommended fall under three general heads:

1. Information, education and publicity.
2. Corroboratives of industrial health hazards and occupational disease.
3. Coöperative legislation.

All students of occupational diseases should obtain a copy of Doctor Hayhurst's report. It is one of the most valuable contributions to this important branch of public health work ever issued.

Factory Construction in Large Cities.

Safety Engineering, January, 1915, publishes an article by E. G. Perrott describing some of the recent advances in the mode of factory construction in Philadelphia. Among these he mentions the substitution of full-fledged stairs enclosed in brick walls for the outside fire escape, the use of the automatic sprinklers, the substitution of reënforced concrete for wood or slow-burning wall material and the use of cement finished floors in warehouses and buildings. Many of the advantages of concrete for construction purposes are pointed out. It allows for more window space, gives greater firmness, is capable of taking a highly ornamental finish and a white coat may be applied directly on the concrete surface instead of plastering the interior of the building.

Safety from the View Point of the Workman.

The attitude of workmen toward industrial accidents is brought out in a recent article by George Sheppard of South Works, Illinois Steel Co.

The beginning of the safety first movement was marked by indifference on the part of the employees, if not by distrust; but the appointing of workmen upon safety committees and their further enlightenment upon the subject have made them ardent supporters of the plan. Men who are unnecessarily careless are reprimanded by their fellow workmen and it is considered a disgrace to be involved in accidents due to carelessness. Since 70 per cent. of the accidents that do take place are still directly the result of carelessness in opposition to the 8 per cent. that are unavoidable, the importance of securing this attitude among employees becomes apparent.

Safety Engineering, January, 1915.

Occupational Disease and Public Health.

A very good article on Occupational Disease and the Public Health by Dr. Donald B. Armstrong, Director of the Department of Social Welfare, New York Association for Improving the Condition of the Poor, appeared in the Boston *Medical and Surgical Journal* of January 14, 1915. Drawing his examples and statistics from conditions in Rhode Island he shows conclusively the immediate relation between occupational disease and public health. He says that from the national standpoint the factors of control are:

1. A thorough-going scientific labor law.
2. The coördination of authority.
3. Honest enforcement of the law, including an adequate system of factory inspection.
4. Effective educational work.
5. An adequate system of reporting industrial disease.
6. A sickness and accident compensation system.

Quoting from an editorial in a recent issue of the *Journal of the American Medical Association*, he says:

"Abbe (Zeiss Optical Works in Germany) kept a careful record for the years when the plant was operating on a nine-hour day. When the working day was reduced to eight hours the record showed the men earned over 3 per cent. more than during the previous years, the output of the works was increased 3 per cent. and the power plant was able to shut down an hour earlier, thus affecting a very material saving in the fundamental expense. The record was for 233 men of 31 years and many different occupations on a piece-work basis were represented in the shop.

"Both employers and employees need to be convinced of the evident fact that the healthy man is the most efficient and the cheapest employee and that any reasonable expense to maintain him in health is a profitable investment."

Coal Mining Accidents.

Two thousand four hundred and fifty-one lives were lost during the year just passed in American coal mines. This is 334 less than the number for 1913.

"Coal mining in 1914," says Van H. Manning, Acting Director of the United States Bureau of Mines, "cost the lives of 3.3 men in every 1,000 employed, while in the year 1913, the death-rate was 3.73. That reduction alone means a saving of more than 300 lives.

"The number of miners killed for every one million tons of coal mined in 1914 was 4.81. In the year 1913, there were 4.89 miners killed for every one million tons mined. With the exception of the year 1912, the 1914 rate is the lowest yet recorded for the United States.

"The amount of coal produced for each miner killed in 1914 was 208,078 tons, which is the largest amount on record with the exception of the year 1912.

"There were 316 lives lost in disasters in which more than five men were killed, which is a reduction of 148 deaths when compared with the disasters of 1913.

"When the Bureau of Mines began its work, the great cause of great disasters in the coal mines of the United States was the explosion of coal dust. This phase of the problem was taken up more vigorously than any other and it is indeed gratifying to the bureau that the explosions from coal dust in 1914 have decreased 96 per cent. from the previous year."

Prevention of Lead Poisoning.

The following list of Instructions for the prevention of lead poisoning to employees has been found to be of great service by the Ohio State Board of Health in its recent investigation of Health-Hazards and Occupational Diseases in Ohio. (Report just published.)

"(1) All workers exposed to lead dusts, lead fumes, lead solutions and lead compounds are liable to poisoning. These poisons get into the body through the nose while breathing, or through the mouth when chewing, or swallowing, or wetting the lips.

"(2) Do all you can to keep down dust. When sweeping or cleaning, always dampen with water, oil or wet sawdust. Where dust cannot be kept down, you must wear a respirator. This must be cleaned out at least once a day.

"(3) Eat breakfast before going to work. Drink milk at meals, and if possible once between meals. Do not eat meals in work-room. Leave work-room at meal times.

"(4) Keep dirty fingers out of your mouth, and off of your food, and whatever goes into your mouth. Wash hands, arms and face with warm water and soap before eating, going to the toilet, or quitting the work-room. Clean your lips and rinse out your mouth before eating or drinking.

"(5) A moustache, if worn, must be kept short. Do not wear a beard. Keep finger-nails clean and cut short, also loose skin about the nails or hands.

"(6) Do not chew tobacco or gum while at work. Avoid the use of intoxicants in any form, as they promote lead poisoning.

"(7) Take a full bath with warm water and soap at least twice a week.

"(8) You must wear overalls and jumpers while at work. Wear a cap if exposed to dust or fumes. Do not wear your working clothes outside of the working place.

"(9) Keep your bowels moving if possible once a day. Report to your foreman if you notice (1) loss of appetite, (2) poor sleep, (3) indigestion, (4) continual constipation, (5) vomiting, (6) pains in stomach, (7) dizziness, (8) continual headache, or (9) weakness in arms, limbs or body."

Decrease of Quarry Accidents.

The number of quarry accidents in the United States in 1913 was 14 per cent. less than during 1912, while the number of men employed had decreased only 6 per cent., according to Technical Paper 92 of the Bureau of Mines, compiled by Albert H. Fay. This booklet classifies the men employed and the accidents by the kinds of quarries in which the men worked. According to this classification the limestone quarry work caused most accidents, namely, 93 during 1913 and 101 during 1912, these figures being in one case 4½ times and in the other 3½ times as high as those for cement rock quarries. Relatively, however, cement rock quarries have the highest death-roll, namely, 3.17 per mill in 1912 and 2.91 in 1913. During 1912 marble quarries ranked second with 2.63 per mill and trap rock third with 2.42, while in 1913 slate was second with 2.56 per mill and trap rock third with 1.93.

Safety Engineering, January, 1915.

Explosive Hazards in Manufacturing Plants.

A complete survey of the above subject is made in an article by J. C. Barden in the January number of *Safety Engineering*. The specific dangers of various explosives are pointed out and remedies suggested for the conditions.

Care must be exercised in storing large carboys of sulphuric, hydrochloric, nitrite and hydro-phuloric acids to avoid high temperatures, unsafe rests, striking, tight corking and slippery floors.

Special rules are given concerning the handling of dangerous gases or vapors, such as gasoline, benzine, alcohol, hydrogen etc., together with the weight of these gases compared to that of air and a discussion of the methods of ventilation.

The dangers of acetylene lighting systems require that the calcium carbide should be kept in watertight metal cans by itself outside the main buildings under lock and key and where it is not exposed to the weather. Specific rules should prohibit the charging of apparatus excepting during daylight hours, the deposit of residue in sewer pipes or near inflammable material and testing the generator or piping with the flame.

Some dust substances from which explosions have been known to occur, oil coal, lamp black, tow, wood dust, cork, sulphur, malt, flour, celluloid, sugar and dextrin, not to mention the dangerous explosives frequently found in manufacturing plants, such as celluloid, chlorates, collodium, dynamite, gun cotton, gun powder, nitrogen chloride, nitro-glycerine, picrates and picric acids which are explosive from heat, shock or friction. Proper ventilating system should remove the explosive dust, while the explosives mentioned in the last list should be stored in separate locked buildings away from heat and sharp or hard instruments or tools.

The article is written from the standpoint of the insurance inspector and continues with a discussion of these various hazards as applied to each of our common industries.

Grain Dust Explosions.

The Millers' Committee of Buffalo has just reported on a form of industrial accident which is said to have been responsible during recent years for the death of seventy-eight men and the injury of one hundred and nineteen. This is the explosion of grain dust in mills and elevators.

Such dust is said to be even more inflammable than coal dust which has long been recognized as responsible for explosions, and it is capable of developing higher pressures on explosion. Not only open lights are the immediate cause of the explosion, but sparks from motors and from friction of belts and grinding machines.

It is recommended that above all else dust should be prevented from escaping into the air, a precaution which would incidentally do away with much of the occupational disease in this industry.

The Survey, January 23, 1915.

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Occurrence of Return Cases of Scarlet Fever and Diphtheria. Experience of the Chicago Department of Health Since the Introduction of a System of Classified Quarantine. G. B. Young. P. 487.

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A Study of Streptococci Isolated from Certain Presumably Milk-borne Epidemics of Tonsilitis Occurring in Massachusetts in 1913–1914. T. Smith and J. H. Brown. P. 455.

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XXX, No. 5. January 29.

Smallpox, Not Plague, at Chattanooga, Tenn. P. 309.

Difficulties in Obtaining Ages—Popular Ignorance and Carelessness Regarding One's Birthday and Age. P. 310.

The Purity and Strength of Household Remedies —Variations in Purity and Strength of Widely Used Drugs and Preparations a Possible Source of Danger to the Patient. P. 311.

XXX, No. 6. February 5.

Public Health Administration in Washington. P. 371.

XXX, No. 7. February 12.

"Tuberclecide" Not Investigated by the United States Public Health Service. P. 469.

Infectious Jaundice. P. 469.

The Limitations to Self-Medication. Uses and Abuses of Proprietary Preparations and Household Remedies. P. 470.

Impounded Waters—A Study of Such Waters on the Coosa River in Shelby, Chilton, Talladega, and Coosa Counties, Ala., to Determine the Extent to which They Affect the Production of Anophelines, and of the Particular Conditions which Increase or Decrease their Propagation. P. 473.

XXX, No. 8. February 19.

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Malaria Control — Drainage as an Antimalarial Measure. P. 536.

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XXIII, No. 2. February

Housing Conditions and Their Relation to the Spread of Tuberculosis. A. M. Williamson. P. 33.

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XXXV, No. 12. January.

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The Water Supply at Antwerp after the Water Works were Destroyed. Furth. P. 2396.